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Posttraumatic Growth Among College Students at a Large Urban University: The Role of Social Support and Unsupportive Social Interactions

Wendy E. Balliet
Virginia Commonwealth University

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A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University.

by

Wendy E. Balliet
Bachelor of Arts, Ithaca College, 2003

Director: Kathleen M. Ingram, J.D., Ph.D.
Associate Professor of Psychology
Department of Psychology

Virginia Commonwealth University
Richmond, Virginia
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Abstract

POSTTRAUMATIC GROWTH AMONG COLLEGE STUDENTS AT A LARGE URBAN UNIVERSITY: THE ROLE OF SOCIAL SUPPORT AND UNSUPPORTIVE SOCIAL INTERACTIONS

Wendy E. Balliet, B.A.

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Major Director: Kathleen M. Ingram, J.D., Ph.D.
Associate Professor, Department of Psychology

The objective of this study was to investigate the association between both social support and unsupportive interactions and psychological outcomes, in a sample of college students who recently had experienced a stressful event. The research design was cross-sectional, and data were collected from 142 college students. As hypothesized, a significant positive association was found between unsupportive interactions received by participants and depressive symptoms. Contrary to hypotheses, no significant associations were found between unsupportive interactions and positive emotion or posttraumatic growth. Additionally, no significant relationship was evident

between received emotional support and the outcome variables. Exploratory analysis revealed that positive reappraisal mediated the relationship between total received support and posttraumatic growth. A major contribution of the present study is evidence for unsupportive interactions significantly predicting depressive symptoms in a college-aged sample. Additionally, the current study adds to the literature concerning the correlates of posttraumatic growth.

Chapter One

Introduction

Individuals who experience severe stressors or traumatic events often report difficulty in their interpersonal relationships, disruptions in their basic life roles and goals, and discord within their original belief and value systems. College students are a distinct group who often encounter adversity that has the potential to disrupt their lives. College students face stressors such as academic problems, romantic relationship difficulties, family problems, personal health problems, dilemmas with friendships, financial hardships, grief and bereavement issues, and difficulty adjusting to college (e.g., Armeli, Gunthert, & Cohen, 2001; Park, Cohen, & Murch, 1996). Historically, the literature on stress and coping has been focused on the negative outcomes of stressful events. Under-represented in the literature has been a theoretical framework that examines positive emotions that can occur throughout the stress and coping process. Examining the positive side of trauma, such as benefit finding and posttraumatic growth, is an emerging trend in the field of positive psychology (e.g., Linley & Joseph, 2004; Sears, Danoff-Burg, & Stanton, 2003). However, more exploration is needed to identify the pathways, or cognitive processes, that lead some individuals to experience such positive outcomes.

Personal resources, such as the support of a loved one, have been found to be associated with psychological adjustment to stress. Moreover, social support has been associated with decreases in psychological distress during stressful periods in one's life. The majority of research on social support and stress however, focuses on perceived social support, which examines one's belief of how a loved one *might* react should support be needed. It is important, then, to examine more thoroughly how the support one actually *receives* during a traumatic or stressful event is associated with a variety of psychological outcomes. This is particularly salient for college students, as developmentally their resources for offering support may vary, and undoubtedly some students are left disappointed in friends or loved ones for failing to live up to their expectations.

It is important to recognize that not all support received from others is helpful during a stressful life event; sometimes even well intentioned support can be perceived as unhelpful (Ingram, Betz, Mindes, Schmitt, & Smith, 2001). Findings have suggested that unsupportive interactions are related to an increase in psychological distress and a decrease in psychological well-being (Figueiredo, Fries, & Ingram, 2004; Manne, Taylor, Dougherty, & Kemeny, 1997; Norton et al., 2005). More specifically, findings from studies examining women with breast cancer and men with prostate cancer suggest that unsupportive responses from others negatively impact psychological well-being (Figueiredo et al., 2004; Lepore & Helgeson, 1998). However, to date, little is known about how unsupportive responses from others impact the levels of personal growth related to stressful events.

It has been widely accepted in the stress and coping literature that a strong relationship exists between stressful life events and psychological distress. However, it is possible that a stressful life event can be a transformative process as well. Researchers are beginning to examine positive outcomes that can potentially arise from a difficult life event. Specifically, Folkman (1997) added positive affect as an outcome to the highly regarded transactional model of stress and coping (Lazarus & Folkman, 1984). Folkman posited that meaning-based processes, such as positive reappraisal, influence psychological outcomes that one experiences throughout the stress and coping process. Positive reappraisal is a cognitive process for reframing a situation to see it in a more positive light. Positive reappraisal might be most helpful in unalterable stressful events, and has been found to be significantly associated with increased positive emotion (Moskowitz, Folkman, Collette, & Vittinghoff, 1996; Schulz & Mohamed, 2004).

Furthermore, Tedeschi and Calhoun (e.g., 1996, 2004) proposed that posttraumatic growth is another outcome of the stress and coping process. Posttraumatic growth has been defined as positive psychological change that is experienced after one endures a significantly taxing life event (Calhoun & Tedeschi, 2001). A hypothesis of the present study was that posttraumatic growth is an additional outcome variable of Lazarus and Folkman's (1984) transactional model of stress and coping.

The present study used the transactional model of stress and coping (Lazarus & Folkman, 1984; Folkman, 1997) as a framework for understanding the pathways that influence a variety of outcome variables (psychological distress, positive emotion, and

posttraumatic growth) in an undergraduate student population. Specifically, it was expected that emotional support received from others would be associated with less psychological distress, and greater positive emotion and posttraumatic growth, in an undergraduate student population. Conversely, it was hypothesized in the present study that students who received greater levels of unsupportive responses would experience more psychological distress, less positive affect, and little, if any, posttraumatic growth. Last, the present study tested positive reappraisal coping as a mediator between social support and posttraumatic growth.

Chapter Two

Literature Review

This literature review will begin with an overview of the original transactional model of stress and coping (Lazarus & Folkman, 1984), followed by Folkman's (1997) revised model of stress and coping which highlights positive psychological states that may occur as a result of the coping process. The concept of posttraumatic growth, as applied to college students, is then discussed, as well as the way in which the construct fits in with the transactional model of stress and coping. The review then examines ways in which social support and unsupportive interactions may impact college students' psychological adjustment to stress. The chapter concludes with a statement of the problem which summarizes the literature and addresses the author's hypotheses.

Transactional Model of Stress and Coping

Lazarus and Folkman (1984) proposed a multidimensional cognitive theory of stress and coping (see Figure 1). They described the process as transactional, meaning that it explains stress and coping as a function of the interaction between the person and his/her environment. This theoretical framework is widely cited and has been applied in a vast amount of research regarding the stress and coping process, and was the basis from which the present study operated. Lazarus and Folkman's theory posits that the way an individual appraises an event is fundamental in determining both the magnitude

of the stress response as well as the type of coping strategy one will use to manage the stressor.

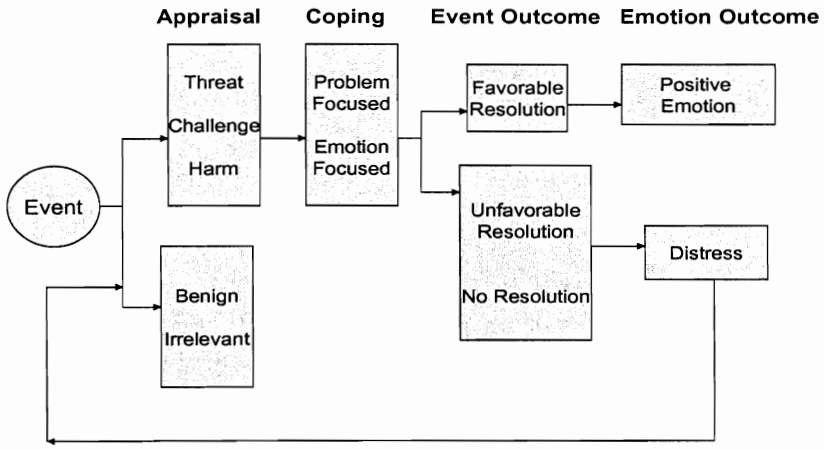

Figure 1. Lazarus and Folkman (1984) transactional model of stress and coping. Adapted from Folkman (1997).

The first step in the stress and coping process is to appraise the transaction. Folkman and Lazarus (1991) described two types of appraisal. During primary appraisal, one determines whether a stressful event signifies a harm/loss, a threat, or challenge. Perceiving an event as harmful indicates damage or injury that has already taken place. For instance, if an individual failed an academic class, the event is likely to be appraised as harmful. Appraising a transaction as a threat denotes a stressor that has the potential to produce harm or loss. Romantic difficulties students often face, for example, can be viewed as a threat and the loss would be the ending of the relationship.

A challenge, on the other hand, refers to the possibility of growth, mastery, or gain. For example, a final exam may be viewed as a challenge because there is the potential for growth (mastery of information and a decent grade). Primary appraisal asks the question, "What do I have at stake in this encounter?" (Folkman & Lazarus, 1991, p. 210). The answer to this question will contribute to the intensity and quality of one's emotional response.

Once an individual has determined whether a stressful event represents a loss, a threat, or a challenge, secondary appraisal asks the questions, "What can I do? What are my options for coping? How will the environment respond to my actions?" (Folkman & Lazarus, 1991, p. 211). The answers to these questions will determine the kind of coping strategy that will be used. Last, appraisals are influenced by personal attributes such as motivation, beliefs about oneself and the world, health, energy, personal resources, and characteristics of hope and optimism. Individual personal characteristics can help explain why some people appraise similar situations in different ways. Once the transaction between the person and the environment has been perceived as stressful (threat, challenge, harm), the individual moves to the next step of the process, which is coping (Folkman & Lazarus, 1991).

Coping, defined by Folkman and Lazarus (1991), refers to cognitive and behavioral efforts to master, reduce, or tolerate the internal and/or external demands created by the stressful transaction. It is essential to note that the process of coping is ultimately different from the outcome. For example, developing a positive attitude is a form of coping, regardless of whether or not the stressful situation is resolved. Folkman

and Lazarus (1991) described two forms of coping: problem-focused coping and emotion-focused coping. *Problem-focused coping* typically occurs when the outcome of a stressful event is perceived as open to change. For example, a professor might tell her student that that he is at risk for failing a class. As a result, the student then might map out a plan of action including attending class, forming group study sessions and improving time management skills, thereby altering the situation (being in danger of failing the class) that is causing distress. Individuals who perceive a stressful event as a challenge often engage in problem-focused coping. This process involves interpersonal as well as problem-solving skills. *Emotion-focused coping*, on the other hand, is generally used when an outcome is appraised as unchangeable. If an individual has just lost a loved one, for example, the primary type of coping used would likely be emotion-based. Instead of trying to alter the situation, one tries to manage the distress caused by the stressor.

Folkman and Lazarus (1991) described three possible ways in which change is brought about by using problem-focused and emotion-focused coping. The first, coined "deployment of attention," refers to coping that averts attention from (avoidant coping), or draws attention to (vigilance coping), the source of distress. The second way change is typically brought about is through changing the subjective meaning or significance of a person-environment transaction. This is a cognitive type of coping activity that might range from denial to positive reappraisal (e.g., when one looks for the good in a difficult situation). Folkman and Lazarus described the last way change is brought about as changing the actual terms of the person-environment relationship. One would engage in

problem-focused coping as an attempt to employ this strategy by focusing on cognitive problem-solving as well as taking direct action on the environment and/or oneself. Coping is a multi-dimensional process. One might fluctuate between using emotion-focused and problem-focused coping and even use both forms simultaneously (Folkman & Lazarus, 1991).

The last pathway Lazarus and Folkman (1984) described is the event outcome that results from the coping process. If one reaches a favorable resolution, positive emotion is produced, resulting in an end to coping. However, when there is no resolution or an unfavorable resolution is produced, as in the case of chronic stress, one will experience distress and continual coping. Emotion is produced and changed throughout the progression of the process of stress and coping. Affect can shift depending on how the individual acts and thinks during his/her person-environment encounters and even between these encounters. Emotion and coping tend to be characterized by a large degree of variability within (and between) individuals.

Coping has been described by Folkman and Lazarus (1991) as a mediator of emotional response. The process begins with a transaction that is appraised as significant for one's well-being. This appraisal then influences coping which, in turn, changes the person-environment relationship, thereby altering the emotional response. However, this is a transactional process. The process of coping is not always sequential in time and one may engage a variety of coping strategies throughout the process.

Positive Psychological States in the Stress and Coping Process

The original model proposed by Lazarus and Folkman (1984) did not take into account positive psychological states when an unfavorable or no resolution is produced. Therefore, Folkman (1997) refined the model to include positive emotion as a viable outcome regardless of the resolution produced. Even in the most stressful of life experiences, people can experience positive emotion (Folkman, 1997). In order to examine the coping process more systematically, it is important to see where and how these positive psychological states fit into this model and the processes that are associated with positive emotion.

Folkman (1997) added three pathways to the original model (see Figure 2). The first pathway leads from event outcome and distress to meaning-based coping. Meaning-based processes are psychological states that individuals use to cope with a stressor. Folkman (1997) described meaning-based coping as activating beliefs, values, or goals that aid in finding positive significance amidst stressful events. Folkman (1997) described four types of meaning-based processes, the first of which is revising one's goals. This is a problem-focused type of coping used to give one a sense of purpose and control, thereby bringing meaning to the process. The second type of meaning-based coping is activating spiritual beliefs and experiences, which is hypothesized to give one existential meaning. Experiencing positive events, even unrelated to the stressor, such as a beautiful sunset or even a delicious sandwich, is a third way to bring meaning to a negative life event (Folkman, 1997).

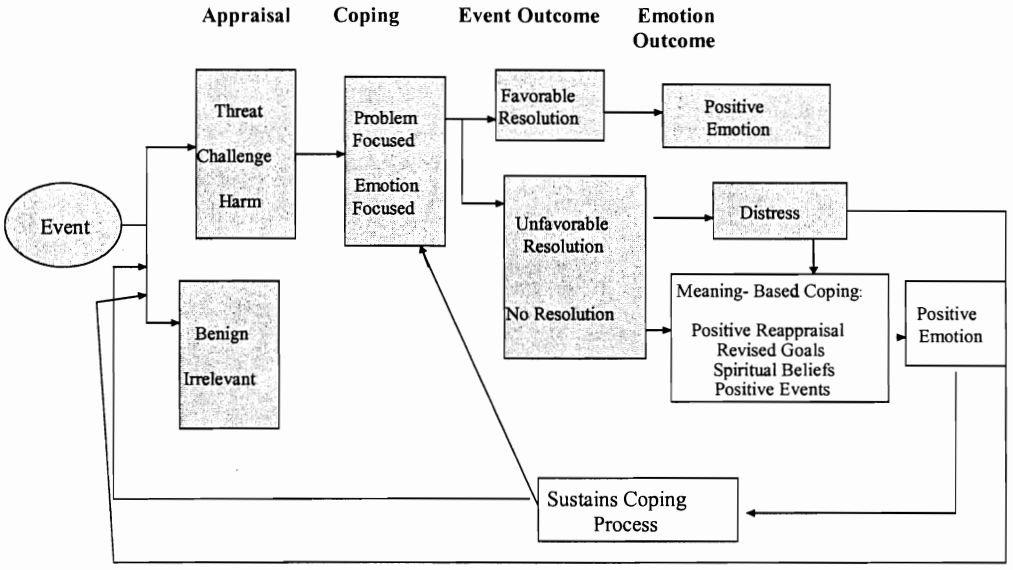

Figure 2. Folkman's (1997) revised transactional model of stress and coping, with the addition of meaning-based coping and positive emotion.

Last, Folkman (1997) described positive reappraisal as a fourth form of meaning-based coping. Positive reappraisal is a cognitive process for reframing a situation to see it in a more positive light. This type of reappraisal can be applied to even the bleakest of stressful encounters and can be used throughout the encounter. Positive reappraisal, or reinterpretation, might be most helpful in unchangeable stressful encounters (Schulz & Mohamed, 2004). Positive reappraisal has been found to be significantly and independently associated with an increase in positive affect (Moskowitz et al., 1996), and is the specific type of meaning-based coping which is the focus of the remainder of this literature review.

Collins, Taylor, and Skokan (1990) posited that those who engage in both active coping and positive reappraisal of a stressful life event will be more likely to make a positive schematic change. Positive reappraisal suggests an active and intentional attempt to search for positive meaning (Sears et al., 2003). In a study of women with early stage breast cancer, Sears and colleagues found that positive reappraisal was a significant and unique predictor of positive emotion. The more patients engaged in positive reappraisal regarding the stressor at the start of the study, the higher they scored on measures regarding positive emotion 3 and 12 months later. Additionally, in a study of individuals diagnosed with cancer, Fife (1995) found that those who used positive focusing as a coping mechanism found positive meaning in regards to their illness.

The second pathway Folkman (1997) added to the original model of coping was positive affect. In addition to the outcome of negative affect presented in Lazarus and Folkman's original model (1984), positive affect has also been reported as an outcome of stressful experiences. This pathway is primarily emotion-focused. It describes coping as a response to distress rather than a response to the conditions that created the distress. Folkman created this pathway as a result of her findings that positive and negative affect can co-occur in highly stressful situations, and do so in a regular pattern. Caregivers of patients with AIDS reported high levels of both negative and positive psychological states regarding the circumstances of caregiving and bereavement (Folkman, 1997). This co-occurrence could imply a functional relationship between negative and positive emotion. For example, negative affect could be used as

motivation to search for positive meaning in order to gain relief or to take a break from the stressor and replenish one's resources (Folkman, 1997).

The final pathway Folkman (1997) added leads from positive psychological states back to appraisal and coping. The coping process that started the positive psychological states could aid in sustaining renewed problem- and emotion-focused coping in handling the stressor. The overarching theme of Folkman's revised model is the process of searching for and finding positive meaning in the midst of stressful life circumstances.

Posttraumatic Growth

Although many negative emotions might surround a stressful life event, the struggle one faces in trying to cope with such an experience can result in positive views of oneself and a greater appreciation for one's life. Through the process of coping with a traumatic event, changes can occur which have the potential to move an individual to a higher level of functioning than originally existed before the event (Linley & Joseph, 2004). It has been demonstrated previously that positive affect can result from a stressful experience (Folkman, 1997). Derived from Folkman's revised transactional model, the current study proposed that posttraumatic growth is an additional outcome of the stress and coping process.

Calhoun, Cann, Tedeschi, and McMillan (2000) have defined posttraumatic growth as "the experience of a significant positive change arising from the struggle with a major life crisis" (p. 521). Making the transition to college on one's own, for example, might lead an individual to reevaluate and redefine his or her life goals and

priorities. Such a reevaluation can then lead to a greater investment in life, spirituality, and personal resources as well as a better appreciation for interpersonal relationships (Tedeschi & Calhoun, 1995). According to Tedeschi and Calhoun (2004), there are five domains of growth: changed priorities and a greater appreciation of life; more meaningful interpersonal relationships; an increased sense of personal strength; new life possibilities; and an increase in spirituality.

After a life crisis many people will express a change in their priorities and a greater appreciation for life. A greater appreciation for life and what it has to offer could be a result of meaning-based coping, particularly the process of reframing negative events to find a "light at the end of the tunnel." Tedeschi and Calhoun (2004) hypothesized that after trauma, people might change their priorities to include the "smaller things in life", much like Folkman (1997) hypothesized that paying attention to positive events (such as a beautiful sunset) would lead to positive affect. Another dimension of posttraumatic growth is the development of more meaningful and intimate relationships with others. An increased sense of personal strength is the third facet of posttraumatic growth and is often expressed by a change in identity. Increased personal strength can be experienced when an individual overcomes a traumatic event. This may lead one to the realization that because the event was survived, one also possesses the strength to overcome future difficulties. Posttraumatic growth is also evidenced by the development of new possibilities, or a change in life goals. Last, some individuals experience spiritual or existential growth. Some people may become more active in

their religion while others might tackle existential questions, such as the meaning of life.

Although the five domains of growth proposed by Tedeschi and Calhoun (2004) cover a wide breadth of possibilities, they do not constitute an exhaustive list (McMillen, 2004). For example, positive health behavior change was recorded as one of the greater areas of growth in people living with AIDS (Siegal & Schrimshaw, 2000). McMillen (2004) noted in his work with adversity survivors that other positive changes exist after trauma, such as financial gain, increased self-knowledge, resisting alcohol and drug use, and even finding a spouse. Janoff-Bulman (2004) suggested that psychological preparedness is yet another facet of posttraumatic growth not covered in Tedeschi and Calhoun's model. Psychological preparedness represents the idea that a trauma survivor will be both better prepared for future trauma and less traumatized by such tragedy. It is clear that Tedeschi and Calhoun's five domains of growth are in some ways limited and other areas should be taken into consideration when attempting to measure posttraumatic growth. The overall message, however, is that out of some kind of loss, it is possible to find some kind of gain. This is consistent with Folkman's (1997) revised model of stress and coping in that it is possible to find meaning amongst stressful life experiences.

One basic question about posttraumatic growth is whether it represents a real outcome from trauma or a positive illusion—a defense mechanism created to offset distress (McFarland & Alvaro, 2000; Taylor & Armor, 1996; Taylor, Kemeny, & Reed, 2000; Tomich & Helgeson, 2003). In congruence with Folkman's (1997) work on

positive affect, Tedeschi and Calhoun (2004) clarified that posttraumatic growth is not simply the end result to a traumatic event. These events are typically followed by distress. In many life crises people experience intense sadness and depression, and sometimes even guilt and anger. However, it is possible for posttraumatic growth to occur alongside these negative reactions. Calhoun and Tedeschi (2004) have found, like Folkman (1997), that personal distress and growth often occur simultaneously after a major life crisis. This experience of both growth and distress suggests that growth is not simply a self-protective strategy.

It may be necessary for an individual to appraise an event as a significant threat and to question his or her basic cognitive schemas in order to experience significant growth. Posttraumatic growth describes the part of that person's development that has exceeded his or her baseline prior to the struggle with trauma. Tedeschi and Calhoun (2004) posited that it is the very struggle with trauma that is necessary for posttraumatic growth to transpire; one's established set of schemas become altered in the face of crisis. As Lazarus and Folkman's (1984) transactional model of stress puts forward, individuals can appraise a stressful event as harm, a threat, or a challenge. Perhaps in the aftermath of trauma, individuals move from appraising their life crisis as harmful or as a threat to appraising it as a challenge -- an opportunity for growth.

Tedeschi and Calhoun (2004) have proposed a basic framework for understanding the process by which some individuals experience posttraumatic growth after a traumatic event. The "assumptive world" is defined by Parkes (1971) as "including everything we know or think we know" in regards to the world in which we

live (p. 103). This assumptive world provides a framework in which we operate; it encompasses our beliefs and our schemas. Many times this assumptive world is shattered, or at the very least severely questioned, when one experiences a traumatic event. Tedeschi and Calhoun (2004) have defined a psychologically "seismic" event as one that "severely shakes, threaten[s], or reduces to rubble" an individual's assumptive world (p. 5). In such a case, the basic parts that make up this world are challenged; for instance, its kindness, controllability, safety, one's sense of self, and the future. Oftentimes when one is faced with a severe stressor, that person's fundamental beliefs in his or her world become forever altered. It is the individual's capacity to work through this new reality after a trauma that will predict whether any growth occurs. Therefore, it is not necessarily the event itself that precipitates growth; rather it is the internal struggle with the event. After any kind of trauma or severe stressor, an individual is likely to experience a significant amount of distress. Thus, growth is not the direct outcome of trauma. The event must be important enough to challenge one's basic assumptions of his or her world. When an individual experiences such distress one typically begins the cognitive processes that are imperative for growth to occur, although not everyone who experiences trauma also experiences growth (Tedeschi & Calhoun, 2004).

In the aftermath of trauma, most individuals will find themselves trying to manage their distress. Cognitive restructuring is a long process and one that might ultimately lead to growth. Soon after the trauma has occurred one might engage in intrusive automatic cognitive processing in which negative thoughts and images

regarding the event occur (Tedeschi & Calhoun, 2004). Rumination, as typically thought of, is a process in which one thinks over the trauma and similar events (Calhoun & Tedeschi, 1998). Tedeschi and Calhoun contend that this negative type of rumination can lead one to disengage from pre-trauma goals and beliefs in the world. When rumination remains intrusive, negative, and continuous for a long period of time, growth is not expected (Calhoun, Cann, Tedeschi, & McMillan, 2000). However, as time passes it is possible that distress could lead to an increase in a more adaptive type of cognitive processing. This could then cause one to separate himself or herself from the old schemas and ways of life and begin to restructure the world in which he or she lives, thereby leading to growth. Calhoun and Tedeschi (1998) describe this process as constructive rumination and contend it is necessary for growth to occur. Rumination of this type attempts to settle the incongruity between one's pre-trauma life and one's post-trauma reality. Early event-related rumination that is not solely negative was found to be related to growth (Calhoun, Cann et al., 2000). Calhoun and Cann et al. (2000) found that greater rumination early after the traumatic experience predicted more posttraumatic growth in students who had experienced a major traumatic event in the past 3 years. Furthermore, Nolen-Hoeksema and Davis (2004) reported that adult bereaved participants who engaged in more "reflective" rumination reported significantly greater use of reappraisal and problem-solving coping. Reflective rumination was also significantly related to finding benefit in the bereavement experience (Nolen-Hoeksema & Davis, 2004).

Often, rumination involves work with grief. After any type of trauma there is typically some kind of loss, whether it is a death, loss of friendship(s), a physical impairment, or even the loss of one's sense of self. Constructive rumination involves using emotion-focused coping, such as positive reappraisal, to discover new ways to move forward in spite of such a loss (Calhoun & Tedeschi, 1998). Tedeschi and Calhoun (2004) hypothesized that between automatic cognitive processing and posttraumatic growth, individuals who have experienced trauma will engage in *deliberate* cognitive processing involving disengagement from previous goals (pre-trauma) and reconstruction of new schemas and life goals (post-trauma). Although the empirical literature has yielded mixed findings regarding the temporal course of posttraumatic growth, several studies have indicated that the longer the time since the stressor, the more growth that is reported (e.g., Cordova et al., 2001; Park et al., 1996). Furthermore, Folkman (1997) found that the caregivers of AIDS patients experienced at least as much positive affect as negative affect, with the exception of the time close to their partner's death. One possible explanation for the decrease in positive affect so close to a loved one's death could be that the caregivers needed time to process and make meaning out of such a tragedy. These findings support Tedeschi and Calhoun's (2004) model. It takes time for an individual to cognitively work through and ruminate over the trauma before growth occurs.

Personality characteristics have also been moderately associated with posttraumatic growth (Schaefer & Moos, 1998; Sears et al., 2003; Tedeschi & Calhoun, 1995, 1996, 2004; Tennen & Affleck, 1998). Specifically, those who demonstrated

high levels of extraversion, openness to experience, optimism, hope, and creativity may be predisposed to experience greater amounts of posttraumatic growth. Tedeschi and Calhoun (2004) also emphasized the importance of social support in aiding posttraumatic growth. The use of narratives or story telling by the trauma survivor is seen as important in promoting growth because, by telling his or her story, the survivor must face the event and its meaning. Perhaps narratives help the survivor to reconstruct meaning in his or her own life.

McMillen (2004) criticized Tedeschi and Calhoun (2004) for overemphasizing cognitive processing, specifically deliberate rumination and narrative building, in aiding posttraumatic growth. Although rumination may help revise one's schemas, it does not always progress in a direct and observable manner. McMillen suggested, for example, that supportive others might remind the trauma survivor of the value of friendship and family, which is also a domain of growth Tedeschi and Calhoun proposed. For instance, those who are supportive and compassionate might remind the survivor that despite what the survivor has been through, there is good in the world. There are a variety of other pathways in which social support can lead to growth, and exploring one's life narrative is merely one. Other pathways that involve social support require further investigation, and these were an important component of the present study.

The empirical literature suggests that on average, college students experience considerable growth resulting from a stressful experience (e.g., Park et al., 1996; Tedeschi & Calhoun, 1996). Undergraduates often report experiencing distress following a stressor such as relationship problems, life-threatening illness or death of a

family member or friend, parents' divorce, starting college or moving, and pregnancy issues (e.g., Park et al., 1996; Tedeschi & Calhoun, 1996; Wild & Paivio, 2003). Furthermore, reports of growth have been documented in other populations following traumatic events such as sexual assault and rape, being diagnosed with cancer, bereavement, having HIV infection or AIDS, military combat, and chronic illness (see Linley & Joseph, 2004 for a review).

As previously mentioned, a stressful life event must be seismic enough to cause rumination and facilitate schematic change. Higher levels of perceived threat and harm have been found to be associated with greater levels of growth (Linley & Joseph, 2004). For example, college students reported experiencing traumas including but not limited to life-threatening, serious illness, or death of a family member; break-in; rape; family member's disability; natural disaster; divorce; and witness to a murder or life-threatening injury (Wild & Paivio, 2003). Students typically perceived these traumas (as measured by the Trauma Questionnaire developed for the study) as very distressing (mean of 4.65 on a 5-point scale of distress, $SD = 0.56$). The authors found that greater reported posttraumatic growth was related to number of traumatic events, more recent trauma, and more distress experienced at the time the trauma occurred. Furthermore, Wild and Paivio found that the level of distress students experienced at the time of the stressful event was positively associated with all five dimensions of posttraumatic growth. Similarly, Park and colleagues (1996) investigated stress-related growth in an undergraduate group of students. The most common negative life events that students reported included relationship problems (romantic or otherwise), academic difficulties,

death of a significant other, moving or starting school, family-related events, and illness or accident experienced by self or other. Interestingly, there was no difference in the amount of growth reported based on type of event. Students reported that these events were very stressful (averaging a 5.91 on a 7-point scale of stressfulness, $SD = 1.14$). The authors also found that college students' stress-related growth was correlated with the perceived stressfulness of the event, as measured by participants' ratings of the initial stressfulness of the event and the current stressfulness of the event, and as measured by the Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979). These findings are congruent with Tedeschi and Calhoun's contention that positive schematic changes, and consequently posttraumatic growth, are preceded by a stressor severe in nature. In these studies of undergraduate populations, researchers have used either the IES or Trauma Questionnaire to assess for subjective stressfulness in undergraduate populations. However, in other studies in the health psychology literature, researchers have used the IES and/or another quantitative measure of subjective stress such as: the *Diagnostic and Statistical Manual of Mental Disorders-IV* definition of posttraumatic stress disorder(*DSM-IV;* American Psychiatric Association, 1994), the PTSD checklist—Civilian version (Weathers, Litz, Herman, Huska, & Keanne, 1993), or a one-item measure asking participants to rate the stressfulness of the event (e.g., Cordova, Cunningham, Carlson, & Andrykowski, 2001; Thornton & Perez, 2006; Sears, Stanton & Danoff-Burg, 2003; Weiss, 2004; Widows, Jacobsen, Booth-Jones, & Fields, 2005).

Armeli and colleagues (2001) also investigated personal growth experienced in an undergraduate sample. They found that the students reported experiencing a number of stressors including death of a friend or relative, romantic problems, family events such as fights, starting college or moving, self-related accident or illness, family or friend accident or illness, academic problems, parents' divorce, interpersonal problems, drug/alcohol difficulties, pregnancy-related problems, and financial problems. In this study, individuals who appraised a stressful event as severe and more threatening, and who had higher levels of social support experienced more growth than those who did not. Interestingly, this group of students also utilized active coping and positive reappraisal coping. On the other hand, students who perceived moderate threat and who had below average support resources typically demonstrated a pattern of coping that Armeli and colleagues (2001) coined "maladaptive" (p. 381). These results follow the transactional model of stress and coping in that growth was predicted by students' appraisal of the event, the coping strategies used, and the resources available.

In a study looking at stressful events experienced by college students, Park and colleagues (1996) found that stress-related growth was significantly correlated with the coping strategy of positive reappraisal. Specifically, positive reinterpretation was highly correlated with growth even after controlling for other variables such as gender and personality characteristics. In an additional study that investigated traumatic events experienced by undergraduate students, the authors reported that posttraumatic growth was significantly associated with active coping, including positive reappraisal (Wild &

Paivio, 2003). More specifically, active coping in this study uniquely accounted for the largest amount of variance in students' reports of posttraumatic growth (22%).

The literature in health psychology also shows associations between posttraumatic growth and positive reappraisal. For example, in a study examining cancer patients who underwent bone marrow transplants (BMT), positive reappraisal was found to be significantly related to an increase in posttraumatic growth (Widows, Jacobsen, Booth-Jones, & Fields, 2005). These results are consistent with Sears et al.'s (2003) finding that positive reappraisal is significantly related to posttraumatic growth in women with breast cancer, and Armeli and colleagues' (2001) report that positive reinterpretation is related to growth in college students and alumni. These findings are not surprising as this coping process attempts to make something positive out of a negative experience. However, other studies have found no relationship between growth and positive reappraisal (e.g., Manne, 2004). There is a paucity of information, however, regarding the correlates of positive reappraisal. The present study hypothesized that social support will help facilitate this type of coping.

Tedeschi and Calhoun (2004) make it clear that posttraumatic growth is one outcome of the coping process. Posttraumatic growth is sometimes confused with stress-related growth, meaning-based coping and positive reappraisal, as well as other similar concepts. The terms stress-related growth and posttraumatic growth are often used interchangeably. Both concepts refer to positive changes after stressful life experiences. Park (2004) chooses "stress-related growth" as opposed to "posttraumatic growth" to encompass all stressful events, including those that do not meet the standard

definition of trauma. Tedeschi and Calhoun (2004) conceptualize trauma in a broader context than the traditional definition (severe events including perceived threat to life or bodily integrity), stating that the phenomenon of posttraumatic growth consists of a much broader range of stressful encounters. On the other hand, terms such as meaning-based coping, benefit finding, positive reappraisal, and so on, describe forms of coping that may lead to positive changes (Tedeschi & Calhoun, 2004). Sears et al. (2003) reported finding distinct, significant correlates of positive reappraisal and posttraumatic growth in a group of women with early-stage breast cancer. For example, greater dispositional hope was a unique predictor of positive reappraisal coping, but unrelated to posttraumatic growth at 1-year follow-up. The concept of posttraumatic growth, then, is viewed as an outcome of coping with a traumatic event, rather than the coping mechanism itself. Sears et al. (2003) also found that the constructs of benefit finding, positive reappraisal, and posttraumatic growth are related to one another, but are separate concepts. The authors' findings suggest that positive reappraisal is a coping mechanism that might increase the likelihood of experiencing posttraumatic growth. In the present study it was hypothesized that cognitive restructuring, particularly positive reappraisal, increases one's opportunity for growth and that the emotional support of others helps facilitate this process.

Social Support

For decades researchers have been investigating the role of social support in coping with life stressors. A vast amount of research has indicated that social support has the potential to reduce psychological distress during stressful or traumatic life

events (e.g., Cohen & Wills, 1985; Helgeson & Cohen, 1996; Suls, 1982; Thoits, 1986). For instance, in a study that investigated college students' perceived social support (support that students presumed would be there if needed) in their living environment, Lepore (1992) found that greater support was significantly associated with lower levels of psychological distress, when perceived by either students' roommate or friend(s). Specifically, students who perceived more support from friends experienced no change in psychological distress when roommate conflicts increased, compared to students who reported low levels of support from friends and consequently experienced an increase in distress associated with roommate conflict. Moreover, higher perceived friend support at baseline was associated with lower levels of psychological distress 7 weeks later (Lepore, 1992).

It is difficult to define the concept of "social support" as it encompasses a wide range of dimensions. Rather, it is more efficient to break the concept of social support into several homogenous concepts that fit into an overall model. Helgeson and Cohen (1996) described three main kinds of social support: emotional, informational, and instrumental. *Emotional support* entails both verbal and nonverbal demonstrations of thoughtfulness and concern (Helgeson & Cohen, 1996). An individual demonstrating emotional support does so by empathizing, encouraging, and comforting. This type of support helps one to feel valued and loved. Emotional support also aids in the discovery of meaning in relation to a stressful experience (perhaps by improving on interpersonal relationships with others). *Informational support* includes the use of information to help advise one experiencing a stressful event (Helgeson & Cohen, 1996). Many nurses and

physicians use informational support when helping those diagnosed with cancer, for example. Making information available has the potential to enhance perceptions of control, as well as increase one's optimism concerning the outcome. *Instrumental support* (also coined *tangible support*) refers to the use of material goods and services in an effort to ameliorate a stressful life experience (Helgeson & Cohen, 1996). For example, a support provider might provide money for a rare operation to help a loved one. Instrumental support has the capacity to increase feelings of control by providing physical resources to use during a stressful encounter.

It is additionally useful to distinguish between received support and perceived support. *Received support* focuses on the recipient's recollection of what the support provider(s) did that was either helpful or was aimed at being helpful. Received support centers on the perception of past events, and how helpful others were in assisting the recipient in coping with such events. Received support has been shown to be significantly different than perceptions of future available support should it be needed; therefore, both types of support should be examined separately (Sarason, Sarason, & Pierce, 1990). The latter kind of support, termed *perceived support*, has been shown to be most closely related to health outcomes (Suls, 1982). This term refers to the recipient's perception of how supportive others *will* be if they are needed. It is important to call attention to the fact that both "received support" and "perceived support" depend on the recipient's perceptions of support. The difference lies in whether it is the perception of what *has* happened (received support) or what *might* happen (perceived support). The present study focuses on the recipient's perception of

received support. Although perceived support has been more closely linked to health outcomes, it is also the type of support most commonly examined. Few studies look at received support, and to date none have examined received support in association with posttraumatic growth. Furthermore, received support focuses on specific behaviors of supportive others. Understanding the specific behaviors provided by supportive others may help in future research aimed at psychosocial interventions.

There is ample research documenting the positive association between emotional social support from others and psychological adjustment to stress (Dakof & Taylor, 1990; Dunkel-Schetter, 1984; Helgeson & Cohen, 1996). For example, the emotional support one receives during a chronic stressor can buffer the threat of such a stressor, thus decreasing negative psychological and physical consequences of the stressor (Lepore, 1995). Emotional support has been found to be the most helpful type of support and to be associated with less distress and greater quality of life for individuals who suffer from chronic illness (e.g., Alferi et al., 2001; Dakof & Taylor, 1990; Lewis et al., 2001). Moreover, emotional support received by undergraduate students, as measured by the positive social exchange subscale of the Inventory for Socially Supportive behaviors (Barrera, Sandler, & Ramsey, 1981), was found to significantly predict depressive symptoms and life satisfaction, after controlling for demographic variables (Finch et al., 1997).

Social Support and Posttraumatic Growth

Studies examining the relationship between social support and posttraumatic growth have yielded mixed findings (e.g., Cordova et al., 2001; Park, 1996; Schulz &

Mohamed, 2004; Widows et al., 2005). A possible explanation for the discrepancy among findings could be the type of support measured. Widows et al. (2005), for example, found no relationship between perceived social support and posttraumatic growth. However, the investigators measured only *perceived* support *prior* to the cancer patients' bone marrow transplantation, using the Interpersonal Support Evaluation List-Short Form (Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Peirce, Frone, Russell, & Cooper, 1996), which measures tangible, appraisal, and belonging support. Perhaps if received emotional support had been measured *after* the BMT, an association might have been found with posttraumatic growth. In a study of women with breast cancer, Cordova et al. (2001) reported that satisfaction with tangible and emotional social support, as measured by the DUKE-Social Support Questionnaire (Broadhead, Gehlbach, De Gruy, & Kaplan, 1988), were unrelated to posttraumatic growth. However, talking about breast cancer was a significant predictor of posttraumatic growth in this sample. Consistent with Cordova et al.'s findings, Weiss (2004) found that perceived social support, measured by the Social Support Questionnaire (SSQ; Sarason, Sarason, Shearin, & Pierce, 1987), was not associated with posttraumatic growth among women with breast cancer and their husbands. However, perceived marital emotional support was found to be significantly correlated with survivors' personal growth. It is feasible to hypothesize, based on Weiss's (2004) study, that a significant other might play a more important role in coping with a traumatic event than a general support network. In addition, Weiss found that when the breast cancer survivors were in contact with other cancer survivors who benefited from their cancer

experience (viewed as models), they reported an increase in posttraumatic growth. It could be hypothesized that support from one who has "been there" will be better received. The difference between received support and perceived support should be noted here. Had these women been asked about *perceived* support prior to meeting their "models," they may not have reported high levels of social support. However, it is evident that the support they *received* aided them in growing from the experience.

Manne et al. (2004) reported that positive reappraisal in partners of women with breast cancer was a significant predictor of partner growth. Manne et al. found that women typically reported above average posttraumatic growth when their partners were above average in their emotional expressiveness. One plausible explanation is that the partners who engaged in higher positive reappraisal and emotional expressiveness were perceived as more supportive by the cancer patients, and this support then facilitated growth. This hypothesis has not been empirically tested however, and warrants future research.

Cadell et al. (2003) found that when bereaved HIV/AIDS caregivers had an increase in perceived social support, they demonstrated the most benefit after the trauma—specifically, higher levels of posttraumatic growth.

Park and Fenster (2004) also found that stress-related growth was positively associated with social support satisfaction in a longitudinal study of growth among undergraduate students, using a perceived social support measure. Students in this study reported a variety of stressors including academic problems, relationship problems, family-related difficulties, own or other health or accident incidents, death of a loved

one, possible pregnancy, and financial struggles (Park & Fenster, 2004). Students reported that the event was highly stressful, averaging 3.65 on a 4-point scale (*SD* = 0.54). As previously mentioned, in a study examining stress-related growth in college students and alumni, Armeli and colleagues (2001) reported that the greatest growth occurred not only with more severe stressors (as indicated by subjective measures of stress including items from the IES and Stress Appraisal Measure [Peacock & Wong, 1990]), but also when the students and alumni reported high levels of social support and used adaptive coping strategies such as problem-focused coping and positive reinterpretation.

Although to date, no studies have measured the association between received support and posttraumatic growth, a relationship between benefit finding and received support has been documented (Schulz & Mohamed, 2004). Specifically, in a study examining individuals who underwent tumor surgery, it was reported that received emotional and instrumental support accounted for a significant amount of variance in finding benefit. Moreover, received support was found to be the strongest predictor of positive change post-surgery. Benefit finding and posttraumatic growth have been found to be distinct constructs (Sears et al., 2003); however, they do share a variety of similarities. Benefit finding is viewed as the identification of benefit from misfortune (Tennen & Affleck, 2002). Therefore, unlike posttraumatic growth, benefit finding may be viewed as a coping mechanism rather than as an outcome of coping. Further research is needed to determine the relationship between received support and posttraumatic growth.

The mixed findings in regard to social support and posttraumatic growth are consistent with the assertion that social support is a multidimensional construct (Sarason et. al, 1990). Calhoun and Tedeschi (1998) hypothesized that social support helps to increase the likelihood of posttraumatic growth. The empirical literature, however, has yielded varied results. Therefore, it is important to examine the relationship between perceived support and posttraumatic growth (as previous studies have done), as well as the relationship of received support and posttraumatic growth.

Carpenter and Scott (1992) have theorized that social support has the potential to affect the way in which an individual views himself/herself and the world. Well received support may be associated with higher levels of well-being, thereby affecting an individual's confidence to address stressful life events. It is plausible then, that emotional support from significant others can promote positive affect and encourage positive reinterpretation concerning a stressful life event. Social support has the capacity to influence coping behavior, including positive reappraisal, as well as posttraumatic growth (Schaefer & Moos, 1995). An individual who has suffered a trauma and who also has personal and social resources is less likely to appraise such a crisis as a threat and instead may depend on coping strategies, such as meaning-based coping, that are likely to promote growth (Schaefer & Moos, 1995).

Unsupportive Social Interactions

The stressors with which college students are faced often have the potential to impact their social relationships with others. Although one might presume that during a

stressful or traumatic event an individual would receive more social support, some network members might withdraw or act in unhelpful ways. An emerging trend in this arena, but still underrepresented, is to study the effect of perceived negative responses from others during stressful life events. Researchers are beginning to acknowledge that unhelpful interactions with others, such as conflict and rejection, might have a negative impact on emotionality above and beyond the helpful effect of social support (e.g., Barrera 1981; Lepore, 1992; Rook, 1984). Individuals may respond to a stressful event in an unhelpful way for a variety of reasons. They may feel helpless, they may not know the "right" thing to say or do, or they might not truly comprehend the process of adjusting to a negative or traumatic life event (Dakof & Taylor, 1990).

Negative reactions from others during a stressful experience may lead one to experience a decrease in psychological well-being. For example, one study reported that conflict within friendships in the context of a college environment was associated with more psychological distress among students who also reported low levels of support from their roommates (Lepore, 1992).

Negative responses from important others may have a direct impact on psychosocial functioning, separate from "positive" social support. Therefore, when examining the psychological outcomes among college students with stressful experiences, it is imperative that research focuses on both positive and negative reactions from others and the role such reactions play in affective outcomes.

Unsupportive social interactions have been defined as unsupportive or upsetting responses received from other people concerning a stressful life event (Ingram et al.,

2001). For example, one might react by minimizing the situation, distancing oneself, expressing forced cheerfulness, avoidance, or blaming when reacting to a significant other's stressful life event. Research has demonstrated that negative interactions are associated with increased psychological distress (Davis, Brickman, & Baker, 1990; Revenson, Schiaffino, Majerovitz, & Gibofsky, 1991). Much like the research that demonstrates the conceptual difference between positive and negative affect (Folkman, 1997), positive and negative interactions have been shown to be distinct constructs, rather than two ends of the same continuum (Ingram et al. 2001).

Ingram and colleagues (2001) identified four types of unsupportive interactions an individual may encounter during a stressful event. The first is distancing, which includes disengaging either emotionally or behaviorally. The second type of unsupportive reaction from others is bumbling, which encompasses behaviors that are inappropriate and often focus on the idea that the person under stress can be "fixed." Minimizing is another form of unsupportive interactions. This kind of reaction from others includes forced optimism and minimizing the individual's trepidations. Blaming is the last type of unsupportive interactions identified by Ingram et al. (2001). Blaming can be thought of as criticizing and finding fault in the person who is undergoing the stressful situation. Ingram and colleagues found that unsupportive responses from others in regards to a stressful life event accounted for a significant amount of variance in both psychological symptoms (depression and overall psychological distress) and physical symptoms, even after controlling for stress and social support. Later studies also supported these findings in a sample of women with cancer, in which unsupportive

interactions accounted for a significant amount of variance in psychological well-being after controlling for social support (Figueiredo, Fries, & Ingram, 2004). Specifically, the women who reported experiencing unsupportive responses from others also experienced lower levels of emotional well-being. These findings are congruent with the notion that social support and unsupportive interactions are distinct constructs.

To date, there is no published research examining the relationship between unsupportive interactions and posttraumatic growth. However, Lepore, Silver, Wortman, and Wayment (1996) posited that unsupportive reactions received by trauma survivors may lead to the suppression of trauma-related thoughts, thus interfering with cognitive processing of the trauma. According to Tedeschi and Calhoun's (2004) model of posttraumatic growth, survivors of a traumatic event must process cognitively, particularly through rumination, in order to experience growth. Therefore, it was hypothesized that those individuals who receive more unsupportive interactions from significant others will also experience less posttraumatic growth.

Statement of the Problem

It has been widely accepted in the stress and coping literature that a strong relationship exists between stressful life events and psychological distress. More recently, however, researchers are beginning to examine positive outcomes that may also result from a difficult life event. Specifically, Folkman (1997) added positive emotion as an outcome to the well-established transactional model of stress and coping (Lazarus & Folkman, 1984). Moreover, Tedeschi and Calhoun (e.g., 1995; 2004) proposed that posttraumatic growth is yet another outcome of the stress and coping

process. The present study was designed to investigate the pathways that are associated with these three outcomes (psychological distress, positive affect, and posttraumatic growth).

Several studies have found that perceived emotional social support from significant others can aid in psychological adjustment to stress (e.g., Dakof & Taylor, 1990; Dunkel-Schetter, 1984; Helegeson & Cohen, 1996). However, there is a paucity of information about the association between received support and adjustment to a traumatic or stressful event. The present study examines the influence of *received* emotional support during a traumatic or stressful event using an undergraduate student sample, through the lens of a transactional stress and coping framework.

Posttraumatic growth has also been named as one viable outcome of coping with a traumatic event (e.g., Tedeschi & Calhoun, 1996; Cordova et al., 2001; Manne et al., 2004; Sears et al., 2003; Weiss, 2004). Studies investigating the relationship between social support and posttraumatic growth have yielded mixed findings (e.g., Cordova et al., 2001; Schulz & Mohamed, 2004; Widows et al., 2005). All of the studies to date investigating social support and posttraumatic growth have examined perceived support, rather than received support. Understanding the relationship between received support and posttraumatic growth will add to the mounting research regarding the possibility of growth after trauma.

Positive reappraisal coping has been associated with both positive affect (Folkman, 1997) and posttraumatic growth (Sears et al., 2003; Widows et al., 2005). However, little is known about the variables that lead one to engage in this meaning-

based coping strategy. The present study hypothesized that socially supportive others may aid an individual faced with a stressful life event in finding meaning and interpreting the event in a more positive way, which then may augment posttraumatic growth.

It must also be recognized that support received from others may sometimes be perceived as unhelpful and upsetting (Ingram et al., 2001). Most studies examining interpersonal factors associated with adjustment to significant stressors have focused on "positive" social support. Findings have suggested that unsupportive interactions are related to increased psychological distress and decreased psychological well-being (Figueiredo et al., 2004; Manne et al., 1997; Norton et al., 2005). Furthermore, the relationship between unsupportive interactions and posttraumatic growth has not been explored. The present study hypothesized that among individuals who have recently experienced a stressful or traumatic life event, receiving unsupportive responses from others concerning that life event will impede the likelihood of experiencing growth.

The present study used Folkman's (1997) revised model of stress and coping (based on Lazuras and Folkman's [1984] original transactional model) as a framework for understanding the pathways that lead an individual who has undergone a traumatic event to experience a variety of emotions. Specifically, the study examined the direct association of social support and unsupportive interactions with the outcomes of distress, positive emotion, and posttraumatic growth. Positive reappraisal was also tested as a possible mediator between social support and posttraumatic growth.

Hypotheses

Four sets of hypotheses were derived from the previous literature review. The severity of the stressor was expected to be a significant predictor of posttraumatic growth. Both social support and unsupportive social interactions were expected to be significant predictors of each of the three outcome variables (positive emotion, psychological distress, and posttraumatic growth). Positive reappraisal was expected to mediate the relationship between emotional social support and posttraumatic growth. Mediation can be described as a hypothesized causal chain in which one variable (emotional social support) affects another variable (positive reappraisal) that, in turn, affects a third variable (posttraumatic growth) (Barron & Kenny, 1986). The middle variable (positive reappraisal) is coined the mediator because it is the vehicle through which the predictor (emotional social support) affects the outcome (posttraumatic growth). Specific hypotheses were as follows:

1) *Direct association between impact of event and posttraumatic growth:*

Impact of events will account for a significant amount of variance in students' reports of posttraumatic growth. Specifically, it is predicted that students who report experiencing more intrusive and avoidant thoughts about their stressor will also report experiencing more posttraumatic growth.

2) *Direct association between emotional social support and the outcome variables*:

a. Emotional support received by students from their main support person will account for a significant amount of variance in students'

reports of depressive symptoms. Specifically, it is predicted that students who report having more social support will also report less psychological distress.

b. Emotional social support received by students from their main support person will account for a significant amount of variance in students' reports of positive affect. Specifically, it is predicted that students who report having more social support will also report experiencing more positive affect.

c. Emotional social support received by students from their main support person will account for a significant amount of variance in students' reports of posttraumatic growth. Specifically, it is predicted that students who report having more social support will also report experiencing more posttraumatic growth.

3) *Direct association between unsupportive social interactions and the outcome variables:*

a. Unsupportive interactions received by students from their main support person will account for a significant amount of variance in students' reports of depressive symptoms. Specifically, it is predicted that those students who experience more unsupportive interactions will report more depressive symptoms.

b. Unsupportive interactions received by students from their main support person will account for a significant amount of variance in

students' reports of positive affect. Specifically, it is predicted that students who experience more unsupportive interactions will report less positive affect.

c. Unsupportive interactions received by students from their main support person will account for a significant amount of variance in students' reports of posttraumatic growth. Specifically, it is predicted that students who experience more unsupportive interactions will report less posttraumatic growth.

4) *Indirect association between social support and posttraumatic growth*:

Positive reappraisal coping will mediate the relationship between received emotional social support (as measured by the positive social exchange subscale from the ISSB) and posttraumatic growth. Specifically, more emotional social support will be associated with greater positive reappraisal, which in turn will be associated with more posttraumatic growth.

Chapter Three

Method

Participants

Demographic information is presented in Table 1. Participants were 142 men and women enrolled in psychology classes at Virginia Commonwealth University. The mean age of the sample was 19.46 years (SD = 1.98), ranging from 18 to 29 years old. There were 107 females and 35 males. Most participants identified as either Caucasian (n = 66; 47%) or African American (n = 36; 25%). Seventeen participants (12%) reported their ethnic/racial background as Asian, 7 (5%) as Hispanic, and 2 (1%) as American Indian. Fourteen participants (10%) identified with another race/ethnicity; of these, 10 (71%) indicated that they were multi-ethnic. The majority of the participants were first year students (n = 86; 61%) enrolled in an Introduction to Psychology class (n = 131; 92%). Thirty-four (24%) participants were sophomores, 9 (6%) were juniors, and 13 (9%) were seniors. The majority of participants reported their relationship status as single (n = 86; 61%), and a little over one-third of the participants reported they were in a partnered relationship (n = 51; 36%). Just under half of the sample (n = 66; 47%) reported living on campus with roommates.

Estimated sample sizes were calculated based on a maximum of six predictors (two variables when testing for mediation and four covariates). The necessary sample size to detect a medium effect size (f^2 = .15; Cohen, Cohen, West, & Aiken, 2003) with

a power level of 0.80 and alpha set at 0.01 is 133 participants, therefore power is considered adequate for this study.

Table 1

Demographic Characteristics of Participants

Variable	Number of Participants	Percent
Age		
18	48	34
19	51	36
20	17	12
21	8	6
22	8	6
23	1	1
24	1	1
25	2	1
26	1	1
27	1	1
28	1	1
29	1	1
Missing	2	1
Gender		
Male	35	76
Female	107	25
Year in school		
First year	86	61
Sophomore	34	24
Junior	9	6
Senior	13	9
Class		
Introduction to Psychology	131	92
Introduction to the Helping Relationship	3	2
Positive Psychology	8	6

Table 1 (continued).

Demographic Characteristics of Participants

Variable	Number of Participants	Percent
Racial/ethnic background		
African American	36	25
American Indian	2	1
Asian American/Pacific Islander	17	12
Hispanic/Latino	7	5
White/Caucasian	66	47
Other	14	10
Relationship Status		
Married	4	3
Partnered	51	36
Separated	1	1
Single	86	61
Living Arrangements		
Significant other	10	7
With family members	23	16
Alone on campus	12	9
Roommates on campus	66	47
Alone off campus	8	6
Roommates off campus	22	16
With children	1	1

Note. Percentages may not add to 100 due to rounding.

Measures

Event impact (See Appendix A). Participants were asked if they had experienced a "major stressor" over the past 12 months. Only participants who endorsed experiencing a stressor over the past year were included in data analyses. Participants were also asked what their stressful event was, and when the event occurred.

Participants then were asked to complete the Impact of Events Scale (IES; Horowitz et al., 1979), which is a measure designed to investigate the psychological impact of stressful and traumatic events (Sundin & Horowitz, 2002). The IES is a 15-item measure that yields a total score and two subscale scores that are thought to capture participants' feelings/thoughts of avoidance (e.g., "I tried to remove it from my memory") and intrusion (e.g., "Any reminder brought back feelings about it"). The response format asks participants to rate how true the items were for the participants during the past 7 days on a scale of 1 (*not at all)* to 4 (*often).*

In the IES scale development study, Horowitz et al. (1979) found good internal consistency for the total score ($\alpha = 0.86$), the intrusion subscale ($\alpha = 0.78$) and the avoidance subscale ($\alpha = 0.82$). The correlation between the intrusion subscale and the avoidance subscale in the preliminary scale development study was 0.41, indicating that the scales share similar characteristics yet remain independent of each other. In other studies examining IES scores in undergraduate populations, the IES continued to show good reliability, with alpha for the total score ranging from 0.87 to 0.88 (Park et al., 1996; Park & Fenster, 2004). The IES is moderately correlated with other scales assessing for PTSD symptoms, anxiety, and depression, thereby indicating good construct validity (e.g., Apurrel & McFarlane, 1995; Arat et al., 1991; Davidson & Baum, 1986).

Received social support scale (see Appendix B). Social support received from others was assessed by the 40-item Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsey, 1981). The 40-item scale is thought to assess different

dimensions of social support. The response format asks participants to rate the frequency with which each of the 40 items occurred during the preceding month on a scale of 1 (*not at all)* to 5 (*about everyday).* The scale yields a total score, and four subscales (Directive Guidance, Nondirective Support, Positive Social Exchange, and Tangible Support). In the present study, only the positive social exchange subscale was included in the main analyses, as this scale is thought to capture received emotional support. Scores for the positive social exchange scale were computed by summing the ratings for all items in the subscale. For the purpose of the present study, the instructions asked participants to rate how their main support person responded to them about the stressful life event that they had previously reported. Preliminary internal consistency evidence for the ISSB yielded coefficient alphas of 0.93 and 0.94 (Barrera, Sandler, & Ramsay, 1981). Ingram et al. (2001) also found strong internal reliability of the ISSB using a college sample, with the total scale alpha at 0.93 and the subscale alphas ranging from 0.67 to 0.88.

Finch et al. (1997) found support for the four-factor structure of the ISSB (Directive Guidance, Nondirective Support, Positive Social Exchange, Tangible Assistance). The authors reported that the four dimensions were differentially related to depressive symptoms (measured by the CES-D; Radolf, 1977) and life satisfaction (measured by the Satisfaction with Life Scale; Diener, Emmons, Larsen, & Griffen, 1984). Specifically, emotional support (positive social exchange) was found to be significantly and negatively associated with depressive symptoms and a significant positive predictor of life satisfaction.

Unsupportive Social Interactions Inventory (USII; see Appendix C*)*. Unhelpful responses from others were assessed by using the USII (Ingram et al., 2001). The USII is a 24-item self-report measure that asks participants how often they have received unsupportive behaviors from others regarding a specific stressor. Respondents are asked to rate the items on a 5-point scale ranging from 0 (*none*) to 4 (*a lot*). For the present study, in order to maintain consistency with the social support measure and to enhance readability, participants were asked to rate how often others have responded this way about the participant's most stressful life experience, using a 4-point scale (ranging from 0 = *never responds this way* to 3 = *often responds this way*). The USII yields four subscale scores as well as a total unsupportive social interactions score. The four subscales are: (1) Distancing (e.g., "Did not seem to want to hear about my experience with cancer"); (2) Bumbling (e.g., "Seemed to be telling me what he or she thought I wanted to hear."); (3) Minimizing (e.g., "Told me to be strong, to keep my chin up, or that I should not let it bother me"); and (4) Blaming (e.g., "In responding to me about my experience, this person seemed disappointed in me"). The total score is computed by calculating the mean from the individual's responses across the 24 items.

The USII was normed on an undergraduate college population and yielded a good internal consistency reliability estimate (0.86 for the total score; Ingram et al., 2001). A study examining a sample of women with breast cancer also found very good internal consistency evidenced by a Cronbach's alpha of 0.89 for the total score (Figueiredo et al., 2004). The USII also demonstrated good construct validity as it was

significantly correlated with measures of depressive symptoms and psychological distress (Figueiredo et al., 2004; Ingram et al., 2001).

Positive Reappraisal Coping (see Appendix D). Positive reappraisal was assessed by using a modified version of the Dealing with Illness Scale which is comprised of stress and coping subscales (DIS; McCain & Gramling, 1992). The instrument development was based on qualitative responses from individuals with HIV disease. The coping subscale of the DIS is thought to assess specific coping patterns (McCain & Gramling, 1992). More specifically, the coping subscale is comprised of items that assess for problem-focused coping (e.g., "talked to someone to find out about the situation"), emotion-focused coping (e.g., "talked to someone about how you were feeling"), and appraisal coping (e.g., "used positive thinking"). Items are rated on a 4-point scale ranging from 1 (*I don't do this at all)* to 4 (*I do this a lot*). One item was added to the measure that is derived from the positive reappraisal subscale of the COPE inventory (Carver, Scheier, & Weintraub, 1989) that reads "Learned something from the experience." Higher scores on the scale reflect more frequent use of a particular type of coping. For the purpose of the present study only the coping subscale was administered and items were reworded from being specific to a medical sample and changed to be appropriate for use in the general population. Only the appraisal items were analyzed in the present study.

The DIS has been used only with participants who have been medically ill (mostly with HIV disease). The appraisal subscale has yielded good internal consistency

for such populations ranging from .77 to .87 (e.g., McCain & Cella, 1995; McCain, Zeller, Cella, Urbanski, & Novak, 1996; Tuck, McCain, & Elswick, 2001).

Center for Epidemiologic Studies Depression Scale (CES-D; see Appendix E). Depressive symptoms were assessed using the CES-D (Radloff, 1977). This is a 20-item measure that was developed to assess for depressive symptoms in the general population. The CES-D items are rated on a 4-point scale, ranging from 0 (*rarely*) to 3 (*all of the time*) and reflect depressive symptoms such as, "I talked less than usual" and "I felt lonely." The instructions indicate that participants should think about how they have felt over the past week when responding to the items.

After several items are reversed scored, items are summed to create a total score ranging from 0 to 60, with higher scores signifying greater depressive symptoms. Preliminary internal consistency evidence for the CES-D yielded a Cronbach's alpha of 0.85 in the instrument development study (Radloff, 1977). Further reports have indicated strong reliability of the CES-D with undergraduate populations (e.g., Finch et al., 1997).

Positive States of Mind (PSOM; see Appendix F). Positive affect was assessed by using the PSOM (Horowitz, Adler, & Kegeles, 1988). The PSOM is a self-report 6-item measure that was developed to assess six types of positive mood: focused attention, productivity, responsible caretaking, restful repose, sensuous pleasure, and sharing. Participants were asked to rate how able they have been to enter each state of mind in the past week on a 4-point scale ranging from 0 (*Unable to have it*) to 3 (*Have it well*). For example, the item assessing responsible caretaking reads: "Feeling that you

are doing what you should do to take care of yourself or someone else." and the item assessing for sensuous nonsexual pleasure reads: "Being able to enjoy bodily senses, enjoyable intellectual activity, doing things you ordinarily like, such as listening to music, enjoying the outdoors, lounging in a hot bath." Each of the six items represents a different state of mind and is scored separately. The six specific states of mind scores can then be summed for a total indicator of positive states of mind, which was done for the purpose of the present study.

Internal consistency evidence revealed a Cronbach's alpha of 0.77 for the six items in the instrument development study (Horowitz et al., 1989). Follow-up studies examining college students, pregnant women, and women undergoing amniocentesis, indicated adequate internal consistency ranging from 0.65 to 0.74 (Adler, Horowitz, Garcia, & Moyer, 1998). Construct validity for the PSOM was evidenced by negative correlations ranging from -0.36 to -0.57 with negative mood states such as tension, depression and anger as measured by the Profile of Mood States subscales (POMS; Lorr, McNair, Douglas, & Fisher, 1982). Additionally, the PSOM was found to be positively correlated with "vigor" ($r = .45, p < 0.0001$), a positive mood state on the POMS.

Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996; see Appendix G). Posttraumatic growth was assessed by using the PTGI, a 21-item self-report inventory that is designed to measure positive changes experienced after trauma (Tedeschi & Calhoun, 1996). The instrument was developed based on responses from an undergraduate college sample and yields a total score as well as five subscale scores.

The five subscales include: (1) New possibilities (e.g., "I developed new interests"); (2) Relating to others (e.g., "A sense of closeness with others"); (3) Personal strength (e.g., "Knowing I can handle difficulties); (4) Spiritual change (e.g., "I have a stronger religious faith"), and (5) Appreciation of life (e.g., "An appreciation for the value of my own life"). Items are rated based on a 6-point scale ranging from 0 (*I did not experience this change as a result of my crisis*) to 5 (*I experienced this change to a very great degree as a result of my crisis*).

Both the total PTGI score (0.90) and the five separate subscales (0.67 - 0.85) demonstrated good internal consistency reliability in the instrument development study. Test-retest reliability was also found to be adequate (0.71) evidenced over a 2-month time interval.

Demographic questionnaire (see Appendix H). Participants were asked to indicate their gender, age, race/ethnicity, year in school, relationship status, and living arrangements.

Procedure

Participants were recruited from psychology classes at Virginia Commonwealth University (VCU) following approval from the VCU Institutional Review Board. Students enrolled in introductory psychology classes are required to participate in 4 hours of research as a course requirement or are given the option of reading research articles and answering questions. Students were also recruited from two upper level psychology classes in which they were offered extra credit for participation. The

researcher informed students about the study and explained the informed consent document (Appendix I). Students who signed the informed consent form were asked to complete the questionnaire packet and return it to the researcher. The packet contained the aforementioned measures of depressive symptoms and positive affect, followed by the set of instructions asking students to name the most stressful or traumatic event they have experienced over the past year. Students then were asked to complete the Impact of the Event Scale, followed by the ISSB, USII, PTGI, DIS, and a demographic questionnaire. The order of the measures is important, in that students began by completing two measures which made no reference to the stressful event. The students were then asked to think about their trauma or stressful life event and continue to think about how it has (or has not) impacted them in a variety of ways while they completed the other measures. The demographic questionnaire was completed last to reduce the possibility that responses on the key measures would be influenced by participant fatigue and/or boredom. Participants who completed and returned the questionnaire packet received credit for this research experience in their psychology class.

Chapter Four

Results

Data Screening

Prior to analyzing the data, appropriate steps were taken to check for errors in the data set. Frequencies were inspected for the categorical variables to ensure that the minimum and maximum values for each item were within the range of potential responses. Descriptive statistics were run on the continuous variables to inspect the minimum, maximum and mean values. All variables were found to be within the range of possible responses. Fifteen questionnaire packets (10% of the data set) were selected randomly and data entry was checked for accuracy. All packets had been entered with 100% accuracy.

Missing Data

During data screening, items that had missing values were identified. If more than 20% of items on a particular scale or subscale were missing, the participant was excluded from the analyses that used that scale. If less than 20% of items were missing, the missing data were imputed using mean substitution based on the participant's scores on other items in that particular scale. For a small number of participants, missing data were imputed using mean substitution for scales measuring depressive symptoms, positive emotion, impact of the event, social support, unsupportive interactions,

posttraumatic growth, and appraisal coping. Nine participants had data that could not be imputed on specific scales due to excessive missing data.

Preliminary Analysis

Statistical tests were conducted to verify that the assumptions of regression analysis were met. Assessment for outliers and the normality of the distribution for each variable was completed through visual inspection of histograms, normal probability plots, and box plots of the distribution. No violation of normality was detected. However, one participant appeared to have responded randomly in sets, as evidenced by endorsing either the lowest or highest possible number on all measures. These responses were not determined to be a valid observation because responses did not change in accordance to reverse coded items; therefore this participant was removed from all analyses. All other outliers were checked and found to be valid observations.

Internal Consistency Reliability

Cronbach's alpha was computed to assess internal consistency reliability on all scales and subscales used in the analyses (see Table 2). Values from the total scale scores used in the main analyses were found to be similar to those reported in previous research, demonstrating good internal consistency reliabilities (above .70). However, the bumbling subscale on the USII ($\alpha = .64$), and the spiritual change subscale on the PTGI ($\alpha = .50$) had lower than desirable internal consistency estimates. For the present study, only the total score of USII and PTGI were used in hypothesis testing; therefore, all reliability estimates were considered adequate.

Table 2

Internal Consistency Reliability Estimates for Scales and Subscales

Instrument	Alpha
Impact of Events Scale (IES)	
Total	.84
Intrusion	.84
Avoidance	.77
Inventory of Socially Supportive Behaviors (ISSB)	
Total	.91
Directive Guidance	.89
Non-directive Guidance	.78
Positive Social Exchange	.73
Tangible Assistance	.85
Unsupportive Social Interactions Inventory (USII)	
Total	.90
Distancing	.78
Bumbling	.64
Minimizing	.80
Blaming	.83
Dealing with Illness Scale (DIS)	
Total Coping Scale	.90
Positive Reappraisal	.90
Center for Epidemiological Studies Depression Scale (CES-D)	.88
Positive States of Mind (PSOM)	.76
Posttraumatic Growth Inventory (PTGI)	
Total	.93
Appreciation of Life	.72
New Life Possibilities	.82
Personal Strength	.82
Spiritual Change	.50
Relating to Others	.88

Descriptive Analyses

Participants were asked to name their most stressful event over the past year (see Table 3). Participants on average reported their stressor occurred 4 months prior (M = 125 days, SD = 98) to completing the questionnaire packet. The type of events reported were similar to those reported in previous studies that investigated undergraduate populations (e.g., Armeli et al., 2001; Ingram et al., 2001; Park, 1996). For example, in the present study, major stressors that students reported experiencing included: interpersonal or romantic relationship problems (27%), academic difficulties (18%), death or illness of a family member (15%), and transitioning to college (7%).

Table 3

Type of Stressful Event Reported by Participants

Event	Number of Participants	Percent
Problems in romantic relationship	29	20
Academic difficulties	26	18
Death of a family member	12	8
Interpersonal problems	10	7
Family-related problems	9	7
Illness/Accident in family	9	7
Transition/Moving to college	9	7
Financial difficulties	6	4
Illness/Accident of self	5	4
Occupational difficulties	5	4
Harassment/Assault	3	2
Death of friend	3	2
Marriage/Engagement	3	2
Move	2	1
Pregnancy issues	2	1
Other	9	7

Note. Percentages may not add to 100 due to rounding of percentages.

Means, standard deviations, and ranges for all measures used in the analyses for the current study are presented in Table 4. The mean for the total scale score measuring the impact of the stressful event (M = 22.71, SD = 8.72) in the present study is lower than the mean presented in the instrument development article (M = 39.5, SD = 17.2; Horowitz et al., 1979), which assessed a primarily middle-aged (M = 34) sample of individuals who were seeking therapy after experiencing a traumatic event. However, the mean total scale score on the IES in the present study is higher than that reported by McFarlane (1992) in a sample of firefighters who had been involved in a natural disaster (M = 17.6). Means were not reported in previous studies conducted in a non-clinical university setting, which makes direct comparison of means in the present study difficult.

Although measures of received emotional support have been used in a variety of studies (e.g., Barrera et al., 1981; Finch et al., 1997), none of the articles reported the means for the total score of the ISSB or the subscales. The instrument development study for the ISSB reported the means for each individual item after a test-retest analysis; however, in the absence of means for the total scale and subscales, direct comparison with the means of the present sample is not possible.

The Unsupportive Interactions Inventory (USII; Ingram et al., 2001) was normed on a predominantly Caucasian college-aged sample. Overall, the students' reports of unsupportive interactions in the current study were relatively low. The mean in the present study (M = 0.77, SD = 0.49), is below that of the total score mean reported in the instrument development study (M = 1.27, SD = 0.66). Similar to the

instrument development study, the current study found the minimizing subscale of the USII had the highest mean (M = 1.36, SD = 0.74 in the present study; M = 1.57, SD = 0.96 in instrument development article).

The Dealing with Illness scale (DIS) was originally developed in a medical population, specifically with individuals who had HIV disease. To date this scale has never been used in research with healthy college students, making it difficult to make direct comparisons to the means of the present study (M = 46.71, SD = 9.48).

The CES-D was originally developed in the general population (Radloff, 1977). It has since been used in college-aged populations when assessing for depressive symptoms (e.g., Finch et al., 1997); however, total score means have rarely been reported. Therefore, it is difficult to make direct comparisons to means in the present study. However, the average score on the CES-D in the current sample (M = 19.21, SD = 8.78) is considerably higher than the means reported from a healthy comparison group of participants in a study investigating depressive symptoms and cancer (M = 8.1, SD = 7.8; Hann et al., 1999).

The PSOM scale was normed with an undergraduate population. The current study's mean on the PSOM (M = 11.8, SD = 3.28) is similar to that reported in the instrument development article (M = 12.41, SD = 3.09; Horowitz et al., 1988).

The mean score on the Posttraumatic Growth Inventory in the present study was 62.59 (SD = 22.66). This is a lower than average mean compared to the total scale mean reported in the instrument development article which also assessed a college-aged sample (M = 71.48, SD = 21.66; Tedeschi & Calhoun, 1996).

Table 4

Means, Standard Deviations, and Ranges of Scales and Subscales

Instrument	Mean	*SD*	Sample Range	Possible Range
Impact of Events [a]				
Total	22.71	8.72	3-44	0-45
Intrusion	11.15	5.13	1-21	0-21
Avoidance	11.54	5.29	0-23	0-24
Inventory of Socially Supportive Behaviors [b]				
Total	78.14	18.88	24-118	0-120
Directive Guidance	28.37	8.95	0-42	0-56
Non-directive Guidance	19.74	4.36	3-24	0-32
Positive Social Exchange	14.43	3.03	3-18	0-18
Tangible Assistance	15.69	8.97	0-36	0-48
Unsupportive Social Interactions Inventory [c]				
Total	0.77	0.49	0-2.29	0-3
Distancing	0.35	0.50	0-2.17	0-3
Bumbling	0.74	0.54	0-2.50	0-3
Minimizing	1.36	0.74	0-2.83	0-3
Blaming	0.62	0.65	0-2.83	0-3
Dealing with Illness Scale [a]				
Positive Reappraisal	46.71	9.48	21-64	16-64
Center for Epidemiological Studies Depression Scale	19.21	8.78	4-46	0-60
Positive States of Mind Scale	12.41	3.28	4-18	0-18

Table 4 (continued)

Means, Standard Deviations, and Ranges of Scales and Subscales

Instrument	Mean	*SD*	Sample Range	Possible Range
Posttraumatic Growth Inventory[a]				
Total	62.59	22.66	6-100	0-105
Appreciation of Life	10.06	3.81	0-15	0-15
New Life Possibilities	14.55	6.56	0-25	0-25
Personal Strength	13.13	4.88	0-20	0-20
Spiritual Change	4.33	3.46	0-10	0-10
Relating to Others	20.47	9.00	0-35	0-35

Note. $N = 142$. However, the sample size for some of the variables is smaller due to missing data. [a]$n = 141$. [b]$n = 138$. [c]$n = 140$.

Correlations

Pearson correlations were computed to examine the relationships among variables used in hypothesis testing (see Table 5). Overall, correlations were not consistent with the hypotheses. Impact of the stressful event was not significantly correlated with students' reports of posttraumatic growth. Similarly, received emotional support (assessed by the positive social exchange subscale from the ISSB) was not significantly correlated with any of the outcome variables (depressive symptoms, positive affect or posttraumatic growth). Students' reports of unsupportive interactions were significantly and positively correlated with ratings of depressive symptoms; however there were no significant correlations between unsupportive interactions and positive affect or posttraumatic growth. Positive reappraisal coping was found to be significantly associated with both received emotional support and posttraumatic growth.

Table 5

Correlations Among Variables Tested in Hypotheses

	1	2	3	4	5	6	7
1. Impact of Events Scale (Total)	---						
2. Inventory of Socially Supportive Behaviors							
Positive Social Exchange	-.01	---					
3. Unsupportive Social Interactions Inventory (Total)	.13	-.33***	---				
4. Dealing with Illness Scale							
Positive Reappraisal	-.04	.19*	.00	---			
5. Center for Epidemiological Studies Depression Scale	.36***	-.05	.34***	-.23**	---		
6. Positive States of Mind Scale	-.29***	.15	-.14	.37***	-.63***	---	
7. Posttraumatic Growth Inventory	.16	.09	.08	.62***	-.02	.19*	--

*$p < .05$. **$p < .01$. ***$p < .001$.

Potential Covariates

Analyses were conducted to test whether any demographic variables were associated with any of the outcome variables (depressive symptoms, positive affect, or posttraumatic growth). An independent-sample *t*-test was conducted to compare the outcome scores for males and females. Results of the first *t*-test showed that gender was a significant covariate with participants' reports of depressive symptoms. Specifically, females ($M = 20.01$, $SD = 8.91$) scored significantly higher on the CES-D as compared

to males, $M = 16.55$, $SD = 7.92$; $t(140) = 2.01$, $p < .05$. No other significant associations were found for gender. Therefore, gender was controlled for in all regression analyses examining participants' reports of depressive symptoms.

Pearson correlations were calculated to determine if the variables age or time elapsed since the stressor were significantly associated with depressive symptoms, positive affect, or posttraumatic growth. The only significant correlation was between age and posttraumatic growth ($r = -.25$, $p < .01$), indicating that an inverse relationship between age and posttraumatic growth may exist. Therefore, age was entered in the first step of all regression analyses examining posttraumatic growth.

A one-way ANOVA was conducted to determine if ethnicity was significantly associated with any of the outcome variables. A one-way ANOVA revealed a significant association ($p <.001$) between depressive symptoms and the six ethnic groups, $F(5, 136) = 4.06$, $p < .001$. Post-hoc comparisons using the Tukey HSD test indicated that participants who identified as Asian scored significantly higher ($M = 27.41$, $SD = 9.60$) on the CES-D than those who identified as African American ($M = 18.71$, $SD = 8.54$), Caucasian ($M = 17.95$, $SD = 7.87$), or Hispanic ($M = 15.23$, $SD = 6.55$). A second one-way ANOVA indicated a significant association ($p < .001$) in positive affect and the six ethnic groups, $F(5, 136) = 4.94$, $p = 0.00$. Post-hoc comparisons revealed that participants who identified as Asian scored significantly lower ($M = 9.35$, $SD = 3.59$) on the scale measuring positive affect compared to those students who identified as African American ($M = 12.19$, $SD = 3.40$), Caucasian ($M = 13.15$, $SD = 2.81$), or Hispanic ($M = 14.28$, $SD = 3.25$). Ethnicity was controlled for in

all regression analyses investigating positive affect. There were no significant associations between ethnicity and posttraumatic growth.

One-way ANOVAs were also calculated to determine if relationship status was significantly associated with any of the outcome variables. Only one participant endorsed being "separated," therefore, a new variable was created in which this participant's scores were included in the "single" category. Results of these ANOVAs indicated that there were no significant associations between relationship status and the outcome variables. It is noteworthy that there was a violation of the assumption of homogeneity of variance, as indicated by Levene's test, on analyses that were run with posttraumatic growth as the outcome variable. This violation is likely the result of the small sample size of "married" participants ($n = 4$). Therefore, Welsh and Brown-Forsythe tests were used when investigating the relationship between posttraumatic growth and relationship status, and no significant differences were apparent ($p > .05$). Last, to determine if any significant relationships existed between living arrangements and the dependent variables, one-way ANOVAs were calculated. Results of these analyses showed that living arrangements were not significant covariates with any of the variables of interest.

Testing of Hypotheses

Hypothesis 1. Impact of events will account for a significant amount of variance in students' reports of posttraumatic growth. Specifically, it is predicted that students who report experiencing more intrusive and avoidant thoughts about their stressor will also report experiencing more posttraumatic growth.

Analysis of Hypothesis 1. A hierarchical multiple regression analysis was computed to examine the relationship between the impact of the stressful life event and students' reports of posttraumatic growth (see Table 6). Age was entered in the first step of the equation, as it was found to be significantly associated with posttraumatic growth. Participants' total impact of events score was entered in the second step, and the total posttraumatic growth score was the dependent variable. The overall model was significant, $F(2, 136) = 5.88, p < .01$. Step 1 of the model shows that age significantly predicted 6% of the variance in posttraumatic growth, $\Delta F(1, 137) = 8.84, p < .01$. Step 2 of the model, however, illustrates that the impact of the stressor did not significantly account for participants' variance in posttraumatic growth after controlling for age, $\Delta F(2, 136) = 2.80, p = .10$. Specifically, the impact of the stressor accounted for 2% of the unique variance in students' reports of posttraumatic growth. This finding was not consistent with the hypothesis that students' reports of more subjective stress about the event would be associated with more posttraumatic growth.

Table 6

Hierarchical Regression Analysis for Variables of Age and Impact of Events Predicting Posttraumatic Growth (N =138)

Variable	*df*	R^2	ΔR^2	ΔF	*B*	*SE B*	β	*t*
Step 1	1, 137	.06	.06	8.84				
Age					-2.81	0.95	-.25	-2.97**
Step 2	2, 136	.08	.02	2.80				
IES					0.36	0.22	.14	1.67

Note. IES = Impact of Events Scale.
* $p < .05$. ** $p < .01$.

Hypothesis 2. Emotional support received by students from their main support person will account for a significant amount of variance in students' reports of depressive symptoms, positive affect, and posttraumatic growth, after controlling for any covariates. Specifically, it is predicted that students who report having more social support will also report less psychological distress, more positive affect, and more posttraumatic growth.

Analyses of Hypothesis 2. Three separate hierarchical multiple regression analyses were conducted to examine the relationship between received emotional social support and the outcome variables (see Table 7). In the first hierarchical regression equation, depressive symptoms were analyzed. In this analysis, gender and ethnicity were entered in the first step of the equation and the emotional support score from the ISSB was entered in the second step. The overall model was not significant, $F(3, 136) = 1.90$, $p = .13$. Emotional support accounted for 1% of unique variance in depressive

symptoms after controlling for ethnicity and gender, ΔF (1, 136) = 1.32, p = .25. Therefore, this specific hypothesis was not supported. In the second hierarchical regression equation, positive affect was examined. Ethnicity was entered in the first step and the emotional support score from the ISSB was entered in the second step. The overall model was not significant, $F(2, 137) = 1.92$, p =.15. After taking ethnicity into account, emotional support accounted for 3% of the variance in students' reports of positive emotion, $\Delta F(1, 137) = 3.51$, p = .06. Therefore, this hypothesis also was not supported. In the third hierarchical regression analysis, posttraumatic growth was analyzed. In this equation age was entered in the first step, and the emotional support score from the ISSB was entered in the second step. The overall model was significant, $F(2, 135) = 4.95$, $p < .01$. Consistent with the first hypothesis, step 1 of the model shows that age significantly predicted 6% of the variance in posttraumatic growth, $\Delta F(1, 136) = 8.77$, $p < .01$. Step 2 of the model, however, illustrates that emotional support did not significantly account for participants' variance in posttraumatic growth ($\Delta R^2 = .01$) after controlling for age, $\Delta F(1, 136) = 1.11$, p =.29.

Table 7

Summary of Hierarchical Regression Analyses for Emotional Support Predicting Depressive Symptoms, Positive Affect, and Posttraumatic Growth

Variable	*df*	R^2	ΔR^2	ΔF	*B*	*SE B*	β	*t*
				Predicting Depressive Symptoms				
Step 1	2, 137	.03	.03	2.18				
Gender					-0.18	0.09	-.17	2.04**
Ethnicity					0.01	0.03	.03	0.30
Step 2	3, 136	.04	.01	1.32				
Emotional Support					-0.01	0.01	-.10	-1.15
				Predicting Positive Affect				
Step 1	1, 138	.00	.00	0.32				
Ethnicity					-0.11	0.19	-.05	-0.56
Step 2	2, 137	.03	.03	3.51				
Emotional Support					0.17	0.09	.16	1.87
				Predicting Posttraumatic Growth				
Step 1	1, 136	.06	.06	8.78**				
Age					-2.81	0.95	-.25	-2.97**
Step 2	2, 135	.07	.01	1.11				
Emotional Support					0.66	0.62	.09	1.06

Note. Emotional Support = Positive Social Exchange Subscale from Inventory of Socially Supportive Behaviors.
*$p < .05$. **$p < .01$.

Hypothesis 3. Unsupportive interactions received by students from their primary support person will account for a significant amount of variance in students' reports of depressive symptoms, positive affect, and posttraumatic growth, after controlling for covariates. Specifically, it is predicted that those students who experience more

unsupportive interactions will report more depressive symptoms, less positive affect, and less posttraumatic growth.

Analysis of Hypothesis 3. Three separate hierarchical multiple regression equations were conducted to examine the association between unsupportive responses from others and the three outcome variables (see Table 8). In the first hierarchical regression equation, depressive symptoms were examined. Gender and ethnicity were entered in the first step of the equation and the total score from the USII was entered in the second step. The overall model was significant, $F(3, 136) = 7.57, p < .001$. Step two of the model shows that unsupportive interactions received by participants from their main support person significantly predicted 11% of unique variance in depressive symptoms above and beyond what was accounted for by gender and ethnicity, $\Delta F(3, 136) = 17.82, p < .001$. Therefore, this specific hypothesis was supported. In the second hierarchical regression equation, positive affect was analyzed. Ethnicity was entered in the first step and the total score from the USII scale was entered in the second step of the equation. The overall model was not significant, $F(2, 137) = 1.53, p = .22$. Unsupportive interactions received from participants accounted for 2% of the variance in positive emotion after taking ethnicity into account, $\Delta F(1, 137) = .2.74, p = .10$. Therefore, this hypothesis was not supported. In the last hierarchical regression equation, posttraumatic growth was examined. Age was entered in the first step and the total USII score was entered in the second step of the analysis. The overall model was found to be significant, $F(2, 135) = 4.60, p < .01$. Again, step 1 of the model shows that age significantly predicted 6% of the variance in posttraumatic growth, $\Delta F(1, 136) =$

8.77, $p < .01$. However, step 2 of the model indicates that unsupportive interactions did not account for a statistically significant amount of variance in participants' reports of posttraumatic growth after taking age into account, $\Delta R^2 = .00$; $\Delta F(2, 135) = 0.45$, $p = .50$. Therefore, this last hypothesis was not supported.

Table 8

Summary of Hierarchical Regression Analysis for Unsupportive Interactions Predicting Depressive Symptoms, Positive Affect, and Posttraumatic Growth

Variable	*df*	R^2	ΔR^2	ΔF	*B*	*SE B*	β	t
				Predicting Depressive Symptoms				
Step 1	2, 137	.03	.03	2.18				
Gender					-3.49	1.71	-.17	-2.04*
Ethnicity					0.15	0.51	.03	0.30
Step 2	3, 136	.14	.11	17.82				
USII					5.98	1.42	.34	4.22***
				Predicting Positive Affect				
Step 1	1, 138	.00	.00	0.32				
Ethnicity					-0.11	0.19	-.05	-0.56
Step 2	2, 137	.02	.02	2.74				
USII					0.93	0.56	-.14	-1.65
				Predicting Posttraumatic Growth				
Step 1	1, 136	.06	.06	8.78**				
Age					-2.81	0.95	-.25	-2.97**
Step 2	2, 135	.07	.00	0.45				
USII					2.60	3.85	.06	0.67

Note. USII = Unsupportive Interactions Inventory.
*$p < .05$. **$p < .01$. ***$p < .001$.

Hypothesis 4. Positive reappraisal coping will mediate the relationship between received emotional social support (as measured by the positive social exchange subscale from the ISSB) and posttraumatic growth (see Figure 3). Specifically, more received emotional social support will be associated with greater positive reappraisal, which in turn will be associated with more posttraumatic growth.

Analysis of Hypothesis 4. To determine if a mediation effect exists, four conditions must be met, according to Barron and Kenny (1986). First, the predictor (emotional social support) must be significantly associated with the outcome variable (posttraumatic growth). Second, the predictor must be significantly associated with the mediator (positive reappraisal coping). Third, the mediator must be significantly associated with the outcome variable. Last, after controlling for positive reappraisal, the association between social support and posttraumatic growth must be significantly reduced. As reported for hypothesis 2, emotional support received from others was not found to be associated with posttraumatic growth after controlling for covariates. Therefore, no further analyses were run for this mediation hypothesis.

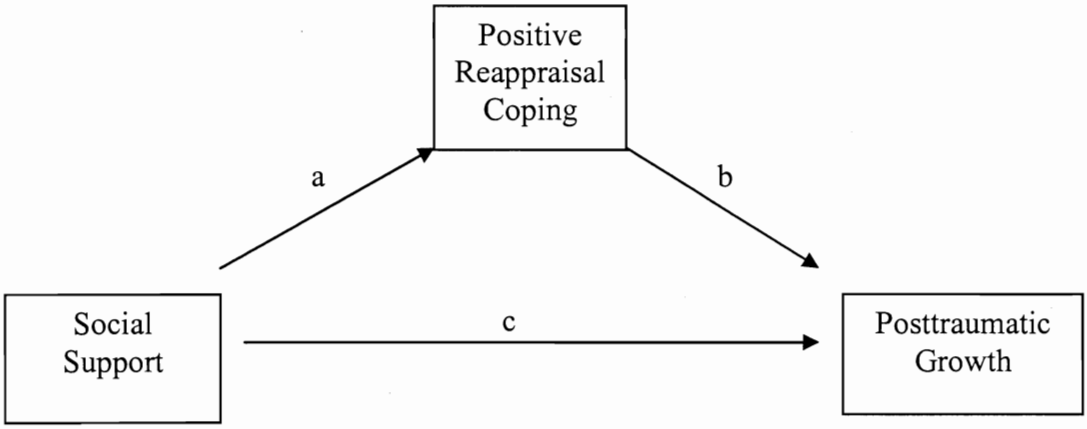

Figure 3. Illustration of hypothesis about a mediation effect between social support, positive reappraisal coping and posttraumatic growth. Mediation exists when path c is significantly reduced after taking positive reappraisal into account.

Exploratory Analyses

Several exploratory analyses were conducted in an effort to understand the results previously described. Specifically, because posttraumatic growth was the variable of interest and the variable that is least understood in the literature, Pearson correlations were calculated between the PTGI (total score and subscale scores) and several other variables not analyzed in hypothesis testing. First, correlations were computed to examine any possible relationship between interpersonal variables and posttraumatic growth. Although emotional support, as assessed by the positive social exchange subscale from the ISSB, was not found to be significantly associated with posttraumatic growth (or any of its subscales), the total social support received from participants' main support person was significantly and positively associated with posttraumatic growth ($r = .25, p < .01$). The total received social support score was also positively associated with two of the five posttraumatic growth subscales: personal strength ($r = .18, p < .05$) and relating to others ($r = .32, p < .001$). Furthermore, the directive guidance subscale of the ISSB was found to be significantly and positively associated with the total posttraumatic growth score ($r = .26, p < .01$), as well as three of the five PTGI subscales: personal strength ($r = .17, p < .05$), relating to others ($r = .34, p < .001$), and new life possibilities ($r = .17, p < .05$). The non-directive guidance subscale from the ISSB was significantly and positively associated with only one subscale from the PTGI: relating to others, $r = .18, p < .05$. Tangible support received from a main support person was significantly associated with the total amount of personal growth reported ($r = .23, p < .05$), and four of the five PTGI subscales:

personal strength ($r = .18, p < .05$), spiritual change ($r = .18, p < .05$), relating to others ($r = .21, p < .01$), and new life possibilities ($r = .21, p < .05$).

Pearson correlations were also calculated to test for associations between the USII subscales and the different facets of posttraumatic growth. Two of the USII subscales were found to be related to posttraumatic growth subscales. The distancing subscale of the USII was significantly and positively related to the new possibilities subscale from the PTGI ($r = .22, p < .01$). Additionally, the bumbling subscale from the USII was positively and significantly correlated with the spiritual change subscale from the PTGI ($r = .20, p < .05$).

Additional correlation analyses were conducted to explore the associations among positive reappraisal coping, received social support (assessed with total score and subscale scores), and posttraumatic growth. Positive reappraisal coping was found to be significantly and positively associated with the total ISSB score ($r = .25, p < .01$). Furthermore, positive reappraisal was significantly and positively correlated with several ISSB subscales: directive guidance ($r = .25, p < .01$), positive social exchange ($r = .19, p < .05$), and tangible assistance ($r = .21, p < .01$). As previously mentioned, positive reappraisal was significantly associated with the total PTGI score ($r = .62, p < .001$), and subsequent analyses revealed that appraisal was significantly related to all of the PTGI subscales: appreciation of life ($r = .45, p < .001$); new possibilities ($r = .53, p < .001$); personal strength ($r = .60, p < .001$); spiritual change ($r = .39, p < .001$); and relating to others ($r = .49, p < .001$).

Regression equations were calculated to further understand the relationship between total support received, positive reappraisal, and posttraumatic growth after controlling for age. Specifically, mediation was tested with social support as the predictor, positive reappraisal as the mediator, and posttraumatic growth as the outcome variable. (see Figure 3).

Results of the regression analyses are displayed in Table 9. Following the steps necessary for testing mediation (based on the recommendations of Barron and Kenny, 1986), posttraumatic growth was first regressed on received social support. Received social support accounted for a significant amount of variance in posttraumatic growth (path c) after controlling for age ($\Delta R^2 = .05, p < .01$). Therefore, the first requirement for mediation was met. To establish that received social support was related to positive reappraisal (second condition necessary for mediation), positive reappraisal coping was regressed on received social support (path a). Received social support accounted for a significant amount of variance in positive reappraisal coping, after controlling for age, $\Delta R^2 = .05, p < .01$. Thus, path a was found to be significant, and the second requirement for mediation was met. In the last mediation analysis, posttraumatic growth was regressed on the following variables in the order presented: (1) age, (2) positive reappraisal, and (3) received social support. Positive reappraisal coping was found to be significantly associated with posttraumatic growth after controlling for age ($\Delta R^2 = .34, p < .001$), therefore meeting the third requirement for mediation analysis. The third regression equation also provided information about the association between received social support and posttraumatic growth after controlling for positive reappraisal

coping. At this step, received emotional support was no longer significantly associated with posttraumatic growth ($\Delta R^2 = .01, p = .26$). Therefore, positive reappraisal coping mediated the relationship between received social support and posttraumatic growth.

Table 9

Summary of Hierarchical Regression Analysis for Testing the Mediator Effects Using Multiple Regression

Variable	*df*	R^2	ΔR^2	ΔF	*B*	*SE B*	β	t
				Predicting Posttraumatic Growth				
Step 1	1, 134	.06	.06	8.65***				
Age					-2.81	0.96	-.25	-2.94**
Step 2	2, 133	.11	.05	6.63**				
ISSB					0.247	0.10	.21	2.58***
				Predicting Positive Reappraisal				
Step 1	1, 134	.15	.02	3.10***				
Age					-0.72	0.41	-.15	-1.76
Step 2	2, 133	.08	.05	7.69**				
ISSB					0.12	0.04	.23	2.77**
				Predicting Posttraumatic Growth				
Step 1	1, 134	.06	.06	8.65**				
Age					-2.81	0.96	-.25	-2.94**
Step 2	2, 133	.40	.34	76.25***				
Positive Reappraisal					1.42	0.16	.59	8.73***
Step 3	3, 132	41	.01	1.31				
ISSB					0.10	0.08	0.08	0.26

Note. ISSB = Inventory of Socially Supportive Behaviors. Positive Reappraisal = Positive Reappraisal subscale from Dealing with Illness Scale Coping Scale.
*$p < .05$. **$p < .01$. ***$p < .001$.

Chapter 5

Discussion

The purpose of the present study was to investigate the relationship between college students' experience of a major life stressor and three outcome variables: depressive symptoms, positive affect, and posttraumatic growth. Specifically, the aim of this study was to broaden the literature concerning the correlates of posttraumatic growth, namely emotional support and unsupportive social interactions, through the framework of Folkman's (1997) revised transactional model of stress and coping. The findings of the present study are summarized below and integrated with the literature. Following the summary is a discussion about the implications of the findings. Last, limitations of the present study and areas for future research are addressed.

Summary of Findings

The present study had four major hypotheses. The first hypothesis asserted that a positive and direct association between the severity of a major life stressor (as subjectively experienced by participants) and posttraumatic growth would exist. The data did not support this hypothesis. There are several possible explanations for the current finding. First, the severity of the stressor was measured using the Impact of Events scale (IES; Horowitz, 1979) which asked participants to rate how often they had experienced avoidant or intrusive thoughts about the stressful event over the past week. The purpose of using the IES in the present study was to assess participants' level of

cognitive restructuring, which is hypothesized to be necessary for posttraumatic growth to occur (Tedeschi & Calhoun, 2004). Additionally, the IES was thought to assess the broad subjective impact the major stressor had for the participants. However, it is possible that in the current study, students who *have* experienced posttraumatic growth have not *recently* experienced intrusive or avoidant thoughts about the stressor. Alternatively, students who had engaged in avoidant or intrusive thoughts over the past week may have not yet engaged in more reflective rumination. Previous research has concluded that when rumination *remains* negative, and intrusive, it is unlikely that posttraumatic growth will occur (Calhoun, Cann, Tedeschi, & McMillan, 2000). Therefore, although intrusive and avoidant thoughts are needed to precipitate posttraumatic growth, constructive rumination must also take place. In the current study, students may have needed more time to fully process the event and engage in more adaptive coping processes. It is also possible that the although the IES assessed students' cognitions about the stressor, it may not have tapped into students' perceptions of the subjective *severity* of the stressor, as it was originally intended to do in the present study. Future research is needed in order to reconcile the discrepant findings between the current study and previous research which has indicated a direct and positive association between the IES and personal growth (e.g., Armeli et al., 2001; Park & Fenster, 2004; Park & Helgeson, 2006). Last, it could be that the types of stressors reported by college students vary significantly compared to individuals in the general population, and such stressors may not have had as deep of an impact on students compared to more objectively traumatic experiences (e.g., cancer diagnosis;

bereavement, and/or assault). Future exploratory analyses investigating the relationship between the severity of the stressor and the type of stressor experienced by participants would be important in clarifying this relationship.

The second hypothesis in the present study stated that emotional social support received by participants from their main support person would be significantly associated with distress, positive affect, and posttraumatic growth, after controlling for any covariates. Again, the data did not support this hypothesis. Emotional support was analyzed in the present study because it previously has been found to be helpful in the discovery of meaning about a stressful life event (Helgeson & Cohen, 1996), and is typically viewed by researchers as the most helpful type of support (e.g., Alferi et al., 2001; Dakof & Taylor, 1990). Research investigating the relationship between emotional support and personal growth has yielded mixed findings (e.g., Cordova et al., 2001; Park, 1996; Schulz & Mohamed, 2004; Widows et al., 2005). The present study is congruent with findings in the literature that have reported there is not a significant association between emotional social support and posttraumatic growth (e.g., Cordova et al., 2001; Weiss, 2004; Widows et al., 2005). Although received social support has been less frequently associated with outcomes of a stressful life event as compared to perceived social support, it is also the type of support that is rarely investigated (e.g., Sarason, Sarason, & Pierce, 1990). To date, previous literature has not examined the association between received social support and posttraumatic growth. It is noteworthy, however, that although emotional support was not directly associated with any of the outcome variables in the present study, exploratory analyses indicated that the total

amount of support received by students about their stressful event was found to be significantly associated with posttraumatic growth ($r = .25, p < .001$). This finding suggests that it may be received support as a whole that aids one in experiencing growth after a stressful experience, rather than one specific type of support. Moreover, the exploratory analyses in the present study indicated that several of the ISSB subscales were found to be significantly related to different facets of posttraumatic growth. For instance, tangible support was related to overall posttraumatic growth ($r = .23, p < .05$), and four out of the five subscales from the PTGI. Perhaps this type of support helped participants feel more in control of their stressor by having what they need to cope with it (e.g., money, transportation). Tangible assistance received from others may have aided participants in their ability to relate to others, think of new life possibilities, increase their personal strength, and make changes in their spiritual life. Interestingly, directive guidance was also related to a variety of posttraumatic growth subscales. Having supportive others provide information about how to deal with the stressor may have assisted participants in having more self-efficacy in their coping ability, thereby leading to growth. Although the main hypothesis about emotional support and posttraumatic growth was not supported in the present study, it is clear that several associations between received support (and its different components) and posttraumatic growth exist, and future research is needed to better explain such relationships.

The third hypothesis stated that unsupportive responses received by participants about their major stressor would be significantly associated with the outcome variables (depressive symptoms, positive emotions, and posttraumatic growth), after controlling

for any covariates. The hypothesis that unsupportive interactions would account for a significant amount of variance in students' experience of depressive symptoms after controlling for any covariates was supported. This is consistent with Ingram et al.'s (2001) finding that unsupportive responses from others about a stressful life event accounted for significant amount of distress among college students. On the other hand, unsupportive interactions were not found to be significantly associated with positive emotion or posttraumatic growth after controlling for any covariates. It was expected that an inverse relationship would exist between unsupportive responses and both positive emotion and posttraumatic growth. There could be several explanations for this finding. Students in general failed to report experiencing considerable amounts of unsupportive interactions. For instance, on average, students reported experiencing less than 1(*"rarely responds this way")* on a 4-point scale (M = .77, SD = .49) regarding their received unsupportive responses from their main supporter. There are a number of reasons why students may have failed to report unhelpful responses from others. For instance, the order of the questionnaire packet may have impacted students' responses. For example, students were *first* asked to think about ways in which their main support person had helped support them through their stressful life event, and then asked to report how their main support person failed to help them. This order may have primed participants to think about their positive experiences with a main support person and hindered participants' ability to think of unhelpful responses received by that same person. It is also possible that the person participants named their as their "main support person," truly did offer mostly "positive" support. Perhaps it would have been

more fruitful to investigate unsupportive responses from a general support network and to examine their association with the outcome variables. Regardless, the restricted range may have impeded the ability to fully understand the relationship between unhelpful responses from others and positive emotion or posttraumatic growth.

The last hypothesis in the present study stated that positive reappraisal coping would mediate the relationship between emotional support and posttraumatic growth. This analysis could not be calculated because the findings failed to satisfy Barron and Kenny's (1986) criteria for testing mediation: emotional social support and posttraumatic growth were not found to be associated with one another in the first regression equation. However, post-hoc exploratory analyses revealed significant relationships between *total* received support and positive reappraisal, total received support and posttraumatic growth, and positive reappraisal and posttraumatic growth. Therefore, a mediation analysis was conducted to further understand the relationship between these three variables. Results indicated that positive reappraisal coping mediated the relationship between *total* received support and posttraumatic growth. Therefore, positive reappraisal coping may act as the vehicle through which received social support influences personal growth. This is consistent with the literature that has investigated the relationship of appraisal coping and personal growth after a major life stressor (e.g., Armeli et al. 2001; Park et al., 1996; Sears et al., 2003; Wild & Paivio, 2003) and adds to the literature concerning the association between social support and posttraumatic growth.

It has been reported in the literature that it may take up to 2 years since the time of a trauma for one to fully experience personal growth (e.g., Park & Helgeson, 2006). This is consistent with Tedeschi and Calhoun's (2004) contention that to grow from a trauma one needs time in order to work through the necessary cognitive processes. One possible explanation for the lack of relationships found between the independent variables and posttraumatic growth is that students were asked to think of a major life stressor that had occurred in the past year. Moreover, students on average reported a stressful event that had occurred 4 months prior (M = 125 days, SD = 98 days) to completing the questionnaire packet. It may have been more appropriate to ask students about their most stressful event, regardless of when it occurred, in an effort to better assess how time since a trauma is related to one's ability to grow personally from such a stressor. However, findings from the present study did support previous literature that attests to the impact unsupportive responses received from a main support person can have on psychological distress following a stressful life event.

Implications

Although there was only one significant finding in hypothesis testing in the present study, several implications still exist. First, the findings from the present study add to the literature that has investigated the impact unhelpful responses from others can have on a variety of outcome variables. Specifically, the present study supported previous findings that found unsupportive interactions are significantly associated with increased psychological distress (e.g., Ingram, 2001). This finding has important

implications, especially for interventions that are aimed at helping caregivers of those who have endured a stressful or traumatic life event.

Second, the findings of this study add to the burgeoning literature on personal growth after a stressful life event. To date, there has been no research that has examined the relationship between unsupportive responses from others and one's ability to grow personally from a major life stressor or trauma. Although the total USII score was not significantly associated with the total posttraumatic growth score after controlling for age, several of the USII subscales demonstrated significant correlations with PTGI subscales in post hoc exploratory analyses. For instance, distancing and blaming were positively associated with the new life possibility subscale of the PTGI ($r = .22, p < .01$; $r = .19, p < .05$, respectively). Additionally, the bumbling subscale of the USII was significantly and positively associated with the spiritual change subscale of the PTGI ($r = .20, p < .01$). However, this correlation should be interpreted with caution, given the problems with internal consistency reliability in the present sample for both subscales ($\alpha = .64$ for bumbling and $\alpha = .50$ for spiritual change). These exploratory results suggest that certain types of unsupportive interactions may play a role in the type of growth one experiences after a stressful life event. It is surprising that certain types of unsupportive interactions were found to be positively correlated with growth, as the present study hypothesized that an inverse relationship between the two variables would exist. Perhaps receiving unsupportive responses from others aided participants in disengaging from previous life goals and prompted them to re-evaluate their spirituality and their future life ambitions. Clearly, further research is needed to continue to explore

the relationship between unsupportive responses received from a main support person and posttraumatic growth.

Third, it has been reported previously that *perceived* emotional support was found to be the most helpful type of social support in adjusting to a major life stressor (Suls, 1982). The present study failed to yield similar results for the association between *received* emotional support and various psychological outcomes. The finding in the current study that emotional support was not associated with the outcome variables has implications for future interventions involving social support after a major life stressor. It is interesting to note that in the exploratory analyses, received social support measured as a whole accounted for a significant amount of variance in participants' level of posttraumatic growth after taking into account their age. Moreover, tangible assistance and directive guidance were shown to be significantly related to participants' total personal growth reported and several of the PTGI subscales. Therefore, these findings suggest that although emotional support may not have the greatest influence on adjustment, perhaps support as a whole influences psychological outcomes.

Additionally, the mediation finding has important implications for the social support literature in that received support was significantly associated with positive reappraisal, which in turn was significantly associated with personal growth. Moreover, this finding adds to the literature on personal growth in that received support had never been assessed in previous studies. Furthermore, the present study adds to the literature that has yielded mixed findings regarding the association between positive reappraisal and posttraumatic growth. Specifically, the present study is consistent with previous

studies that found a strong association between these two variables (e.g., Armeli, 2001; Manne et al., 2004). This finding has implications for future interventions that may be aimed at helping caregivers and individuals grow from trauma. For example, education could be given to support providers about cognitive restructuring techniques that help individuals appraise their stressor in a new light, thereby leading to growth.

Another contribution of the present study is the preliminary validation of the use of the Dealing with Illness Scale (McCain & Gramling, 1991) in a healthy population. The revised DIS that was used in this study demonstrated excellent internal consistency reliability for the total scale ($\alpha = .90$) and the appraisal subscale ($\alpha = .90$). This could prove helpful in measuring ways in which people cope with a major life stressor. Specifically, the DIS was utilized in the present study, rather than other coping measures (e.g., COPE; Carver et al., 1989), because of the number of items that tapped into the appraisal subscale (i.e., 4 items on the COPE as compared to 20 on the DIS).

Finally, the present study had theoretical implications. Specifically, this study reinforced Folkman's (1997) revised transactional model of stress and coping, taking positive emotion and meaning-based coping into account. The present study attests to the relevance meaning-based coping has for psychological outcomes, specifically posttraumatic growth. In order to further test Folkman's model this study could be expanded to take other types of meaning-based coping into account.

Limitations

There are several limitations in the present study. First, the measurement utilized in the study is a significant limitation. Specifically, students' stress level was measured

by the Impact of Events Scale (Horowitz et al., 1979). This scale is designed to assess cognitive processes (avoidant or intrusive thoughts) that one may experience after a stressful or traumatic event. Although this measure likely tapped into avoidant or intrusive thoughts that students experienced over the past week, it may have failed to assess students' overall level of stress that resulted from their major life stressor. Furthermore, Lazarus and Folkman (1984) have claimed that appraisal of a stressful event (threat, harm, or challenge) is important in determining the way one copes with the event and the current study failed to take such appraisal into account.

Another limitation of the current study is the sample as a whole. Although efforts were made to capture a diverse student sample, the majority of students were young ($M = 19$, $SD = 1.98$) and enrolled in introductory to psychology classes. It is possible that the major life stressors students reported were not "severe" enough to shatter their assumptive world and thereby aid in personal growth. Therefore, it is uncertain how much influence the independent variables would have on the outcome measures, if the sample were more heterogeneous in regards to age and type of stressor experienced.

Another significant limitation is that the present study was retrospective and cross-sectional. Reported growth has been more strongly related to positive psychological outcomes when at least 2 years have transpired since the time of the trauma (Park & Helgeson, 2006). According to both Tedeschi and Calhoun (2004) and Lazaurus and Folkman (1991), time is needed for appraisals, social support, and reframing to take place and coping with a stressor is a transactional process. Therefore,

using a cross-sectional design captured only one snap-shot of the larger picture. For instance, the direction of the relationship between positive reappraisal coping and posttraumatic growth cannot be established because these variables were measured at a single point in time.

A further limitation to this study is that it relied on student self-report for all data. Although this was thought to be the best method of data collection, it is possible that participants' self-report impacted the data and analyses in several ways. For instance, students may have under-reported the amount of unsupportive social interactions they experienced. As previously mentioned, the questionnaire packet placed the social support measure ahead of the USII which may have decreased the likelihood of students reporting unhelpful responses from their main support person. When using both social support and unsupportive measures in the future, it may be helpful to integrate the two. The restriction in range of the responses on the USII makes it difficult to establish if the measure truly captured the construct it was designed to assess.

Finally, the manner by which personal growth is measured can be viewed as a significant limitation. Several investigators have critiqued the ability to quantify personal growth after trauma (see Park & Helgeson, 2006 for a review). It may be difficult for a specific measure to capture the way in which one changes positively after a traumatic experience. For instance, the Posttraumatic Growth Inventory does not assess for positive health behavior change, changes in drug or alcohol use, or preparedness for future trauma/stressors. It may be that a qualitative method of

assessing growth would be more fruitful in understanding how individuals change after a major life stressor.

Future Directions

The present study offers a good starting point for investigating the relationships between support and posttraumatic growth. Several areas for future research are available. For instance, exploratory findings in the present study suggest a positive relationship between received social support and posttraumatic growth. This is the first study to date that has investigated the two variables together. It would be interesting to further explore the components of received support in a longitudinal study that assesses personal growth. Exploring the relationship between different facets of support and personal growth would enhance the existing literature on the correlates of personal growth. Moreover, investigating these variables longitudinally would allow for a more comprehensive model of posttraumatic growth. In addition, understanding the relationship between received support (both in general and specific types) and various outcome variables (distress, positive emotion, and posttraumatic growth), could influence interventions targeted to caregivers or support providers, making such interventions more comprehensive and complete.

The present study was also the first to investigate the relationship between unsupportive interactions and personal growth. The literature on posttraumatic growth needs to be expanded to take into account the impact unsupportive responses may have concerning personal growth. Although no significant findings were found in the present study, exploratory analyses suggested that there is a relationship between specific types

of unhelpful responses and posttraumatic growth. A future study that investigates these potential relationships in a sample with a wider range of unsupportive interactions could add significantly to the literature on posttraumatic growth. Furthermore, the present study examined relationship-specific unsupportive interactions (i.e., unsupportive responses from participants' "main support person."). Future studies investigating personal growth should explore non-relationship specific interactions as well. It is also recommended that future studies investigate unsupportive interactions and posttraumatic growth in different populations with more severe stressors such as chronic illness, being diagnosed with cancer, surviving an earthquake, or surviving rape or assault.

The present study failed to take into account personality characteristics, such as extraversion, that have been shown to be associated with positive outcomes after trauma (e.g., Tedeschi & Calhoun, 2004). Along the same lines, the current study did not measure personal attributes such as optimism or hope, which have been shown to be positively associated with personal growth (e.g., Tedeschi & Calhoun, 2004). Future studies should take into account such characteristics as possible moderators of posttraumatic growth.

Finally, the most important finding in the present study was that positive reappraisal mediated the relationship between received social support and posttraumatic growth. However, a longitudinal study is needed in order to examine temporal relationships among these variables to corroborate Lazarus and Folkman's (1984) transactional model of stress and coping. Additionally, there are alternative models that

might fit the present data just as well; therefore, additional studies examining other types of coping (problem and emotion-focused) as potential mediators between support and personal growth are needed.

List of References

List of References

Adler, N. E., Horowitz, M., Garcia, A. (1998). Additional validation of a scale to assess positive states of mind. *Psychosomatic Medicine, 60,* 26-32.

Alferi, S. M., Carver, C. S., Antoni, M. H., Weiss, S., & Duran, R. E. (2001). An exploratory study of social support, distress, and life disruption among low-income Hispanic women under treatment for early stage breast cancer. *Health Psychology, 20,* 41-46.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Arata, C. M., Saunders, B.E., & Kilpatrick, D.G. (1991). Concurrent validity of a crime-related post-traumatic stress disorder scale for women with the Symptoms Checklist-90-Revised. *Violence & Victims, 6,* 191-199.

Armeli, S., Gunthert, K. C., Cohen, L. C. (2001). Stressor appraisals, coping, and post-event outcomes: The dimensionality and antecedents of stress-related growth. *Journal of Social and Clinical Psychology, 20,* 366-395.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Barrera, M., Sandler, I. N., & Ramsay, T. B. (1981). Preliminary development of a scale of social support: Studies on college students. *American Journal of Community Psychology, 9,* 435-447.

Broadhead, W. E., Gehlbach, S. H., De Gruy, F. V., & Kaplan, B. H. (1988). The Duke -UNC Functional Social Support Questionnaire: Measurement of social support in family medicine patients. *Medical Care, 26,* 709-723.

Butler, L. D., Koopman, C., Classen, C., & Spiegel, D. (1999). Traumatic stress, life events, and emotional support in women with metastatic breast cancer: Cancer-related traumatic stress symptoms associated with past and current stressors. *Health Psychology, 18,* 555-560.

Cadell, S., Hemsworth, D., Regehr, C. (2003). Factors contributing to posttraumatic

growth: A proposed structural equation model. *American Journal of Orthopsychiatry, 73,* 279-287.

Calhoun, L. G., & Tedeschi, R. G. (1998). Posttraumatic growth: Future directions. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds), *Posttraumatic growth: Positive change in the aftermath of crisis* (pp. 215-238). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Calhoun, L. G., Cann, A., Tedeschi, R. G., & McMillan, J. (2000). A correlational test of the relationship between posttraumatic growth, religion, and cognitive processing. *Journal of Traumatic Stress, 13,* 521-527.

Calhoun, L. G., & Tedeschi, R. G. (2001). Posttraumatic growth: The positive lessons of loss. In R. A. Neimeyer (Ed.), *Meaning reconstruction and the experience of loss* (pp. 157-172). Washington, DC: American Psychological Association.

Carpenter and Scott (1992). Interpersonal aspects of coping. In B. Carpenter's (Ed), *Personal coping: Theory, research, and application* (pp. 93-109). Westport CT: Praeger.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56,* 267-283.

Clark, K. K., Bormann, C. A., Cropanzano, R. S., & James, K. (1995). Validation evidence for three coping measures. *Journal of Personality Assessment, 65,* 434-455.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. (1985). Meausuring the functional components of social support. In I. G. Srason & B. R. Sarason (Eds), *Social support: Theory, research, and application* (pp. 73-94). The Hague, the Netherlands: Martinus Nijhoff.

Cohen, S. & Wills, T. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin, 98,* 310-357.

Collins, R. L., Taylor, S. E., & Skokan, L. A. (1990). A better world or a shattered vision? Changes in life perspectives following victimization. *Social Cognition, 8,* 263-285.

Cordova, M. J., Cunningham, L. C., Carlson, C. R., & Andrykowski, M. A. (2001). Posttraumatic growth following breast cancer: A controlled comparison study. *Health Psychology, 20,* 176-185.

Dakof, G. A., Taylor, S. E. (1990). Victims' perceptions of social support: What is helpful from whom? *Journal of Personality and Social Psychology, 58,* 80-89.

Davidson, L. M., & Baum, A. (1986). Chronic stress and posttraumatic stress disorders. *Journal of Consulting and Clinical Psychology, 54,* 303-308.

Davis, R. C., Brickman, E., & Baker, T. (1991). Supportive and unsupportive responses of others to rape victims: Effects on concurrent victim adjustment. *American Journal of Community Psychology, 19,* 443-451.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49,* 71-75.

Dunkel-Schetter, C. (1984). Social support and cancer: Findings based on patient interviews and their implications. *Journal of Social Issues, 40,* 77-98.

Fife, B. L. (1995). The measurement of meaning in illness. *Social Science & Medicine, 40,* 1021-1028.

Figueiredo, M. I., Fries, E., & Ingram, K. M. (2004). The role of disclosure patterns and unsupportive social interactions in the well-being of breast cancer patients. *Psycho-Oncology, 13,* 96-105.

Finch, J. F., Barrera, M., Okun, M. A., Bryant, W. M., Pool, G. J., Snow-Turek, A. L. (1997). The factor structure of received social support: Dimensionality and the prediction of depression and life satisfaction. *Journal of Social & Clinical Psychology, 16,* 323-342.

Folkman, S., & Lazarus R. S. (1991). Coping and Emotion. In A. Monat, & R. S. Lazarus (Eds.), *Stress and Coping: An Anthology* (3rd ed., pp 207-227). New York: Columbia University Press.

Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine, 25,* 1207-1221.

Hann, D., Winter, K., Jacobsen, P. (1999). Measurement of depressive symptoms in cancer patients: Evaluation of the center for epidemiological studies depression scale (CES-D). *Journal of Psychosomatic Research, 46,* 437-443.

Helgeson, V. S., & Cohen, S. (1996). Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychology, 15,* 135-148.

Helgeson, V. S., Reynolds, K. A., & Tomich, P. L. (2006). A Meta-Analytic Review of Benefit Finding and Growth. *Journal of Consulting and Clinical Psychology, 74,* 797-816.

Horowitz, M., Adler, N., & Kegeles, S. (1988). A scale for measuring the occurrence of positive states of mind: A preliminary report. *Psychosomatic Medicine, 50,* 477-483.

Horowitz, M., Wilner, N., & Alvarex, W. (1979). Impact of event scale: A measure of subjective stress. *Psychosomatic Medicine, 41,* 209-218

Ingram, K. M., Betz, N. E., Mindes, E. J., Schmitt, M. M., & Smith, N. G. (2001). Unsupportive responses from others concerning a stressful life event: Development of the Unsupportive Social Interactions Inventory. *Journal of Social and Clinical Psychology, 20,* 174-208.

Janoff-Bulman, R. (2004). Posttraumatic growth: Three explanatory models. *Psychological Inquiry, 15,* 30-34.

Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping.* Springer, New York.

Lepore, S. J. (1992). Social conflict, social support and psychological distress: Evidence of cross-domain buffering effects. *Journal of Personality and Social Psychology, 63,* 857-867.

Lepore, S. J. (1995). Measurement of chronic stress. In C. Sheldon, R. Kessler, & L. Gordon (EDs), *Measuring Stress: A guide for health and social scientists* (pp. 102-120). New York: Oxford University Press.

Lepore, S. J., Silver, R. C., Wortman, C. B., & Wayment, H. A. (1996). Social constraints, intrusive thoughts, and depressive symptoms among bereaved mothers. *Journal of Personality and Social Psychology, 70,* 271-282.

Lepore, S. J., & Helgeson, V. S. (1998). Social constraints, intrusive thoughts, and mental health after prostate cancer. *Journal of Social and Clinical Psychology, 17,* 89-106.

Lewis, J. A., Manne, S. L., DuHamel, K. N., Vickburg, S. M., Bovberg, D. H., Currie, V., Winkel, G., & Redd, W. H. (2001). Social support, intrusive thoughts, and quality of life in breast cancer survivors. *Journal of Behavioral Medicine, 24,* 231-245.

Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress, 17,* 11-21.

Lorr, M., McNair, D. M., Fisher, S. (1982). Evidence for bipolar mood states. *Journal of Personality Assessment, 46,* 432-436.

Manne, S. L., Taylor, K. L., Dougherty, J., & Kemeny, N. (1997). Supportive and negative responses in the partner relationship: Their association with psychological adjustment among individuals with cancer. *Journal of Behavioral Medicine, 20,* 101-125.

Manne, S. L., Ostroff, J., Winkel, G., Goldstein, L., Fox, K., & Grana, G. (2004). Posttraumatic growth after breast cancer: Patient, partner, and couple perspectives. *Psychosomatic Medicine, 66,* 442-454.

McCain, N. L. & Cella, D. F. (1995). Correlates of stress in HIV disease. *Western Journal of Nursing Research, 17,* 141-155.

McCain, N. L. & Gramling, L. F. (1992). Living with dying: Coping with HIV disease. *Issues in Mental Health Nursing, 13,* 271-284.

McCain, N.L., Zeller, J.M., Cella, D.F., Urbanski, P.A., & Novak, R.M. (1996). The influence of stress management training in HIV disease. *Nursing Research, 45* , 246-253.

McFarland, C., & Alvaro, C. (2000). The impact of motivation on temporal comparisons:
Coping with traumatic events by perceiving personal growth. *Journal of Personality and Social Psychology, 79,* 327-343.

McFarlane, A. C., & Papay, P. (1992). Multiple diagnoses in posttraumatic stress disorder in the victims of a natural disaster. *Journal of Nervous and Mental Disease, 180,* 498-504.

McMillen, J. C. (2004). Posttraumatic growth: What's it all about? *Psychological Inquiry, 15,* 48-52.

Moskowitz, J. T., Folkman, S., Collette, L., & Vittinghoff, E. (1996). Coping and mood

during AIDS-related caregiving and bereavement. *Annals of Behavioral Medicine, 18,* 49-57.

Nolen-Hoeksema, S., & Davis, C. G. (2004). Theoretical and methodological issues in the assessment and interpretation of posttraumatic growth. *Psychological Inquiry, 15,* 60-64.

Norton, T. R., Manne, S. L., Rubin, S., Hernandez, E., Carlson, J., Bergman, C., & Rosenblum, N. (2005). Ovarian cancer patients' psychological distress: The role of physical impairment, perceived unsupportive family and friend behaviors, perceived control, and self-esteem. *Health Psychology, 23,* 259-266.

Park, C. L.(2004). The notion of growth following stressful life experiences: Problems and prospects. *Psychological Inquiry, (15),* 69-76.

Park, C. L, Cohen, L. H., & Murch, R. L. (1996). Assessment and prediction of stress-related growth. *Journal of Personality, 64,* 71-105.

Park, C. L. & Fenster, J. R. (2004). Stress-related growth: Predictors of occurrence and correlates with psychological adjustment. *Journal of Social & Clinical Psychology, 23,* 195-215.

Parks, C. L. & Helgeson, V. S. (2006). Introduction to the Special Section: Growth Following Highly Stressful Life Events--Current Status and Future Directions. *Journal of Consulting and Clinical Psychology, 74,* 791-796.

Parkes, C. M. (1971). Psycho-social transitions: A field for study. *Social Science & Medicine, 5,* 101-115.

Peirce, R. S., Frone, M. R., Russell, M., & Cooper, M. (1996). Financial stress, social support, and alcohol involvement: A longitudinal test of the buffering hypothesis in a general population survey. *Health Psychology, 15,* 38-47.

Peacock, E. J., & Wong, P. T. (1990). The Stress Appraisal Measure (SAM): A multidimensional approach to cognitive appraisal. *Stress Medicine (6),* 227-236.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1,* 385-401.

Revenson, T. A., Schiaffino, K. M., Majerovitz, S. D., & Gibofsky, A. (1991). Social support as a double-edge sword: The relation of positive and problematic support to depression among rheumatoid arthritis patients. *Social Science & Medicine, 33,* 807-813.

Rook, K. (1984). Promoting social bonding: Strategies for helping the lonely and socially isolated. *American Psychologist, 39,* 1389-1407.

Sarason, B. R., Sarason, I. G., & Pierce, G. R. (1990). Traditional views of social support and their impact on assessment. In B. R. Sarason, I. G. Saraon, & G. R. Pierce (Eds), *Social support: An interactional view* (pp. 9-25). New York: Wiley.

Sarason, I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships, 4,* 497-510.

Schafer, J. A., & Moos, H. A. (1998). The context for Posttraumatic growth: Life crises, Individual an Social Resources, and Coping. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds), *Posttraumatic growth: Positive change in the aftermath of crisis* (pp. 99-121). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Schulz, U., & Mohamed, N. E. (2004). Turning the tide: Benefit finding after cancer surgery. *Social Science & Medicine, 59,* 653-662.

Schrimshaw, E. (2003). Relationship-specific unsupportive interactions and depressive symptoms among women living with HIV/AIDS: Direct and moderating effects. *Journal of Behavioral medicine, 26,* 297-313.

Sears, S. R., Stanton, A. L., Danoff-Burg, S. (2003). The yellow brick road and the emerald city: Benefit finding, positive reappraisal coping, and posttraumatic growth in women with early-stage breast cancer. *Health Psychology, 22,* 487-497.

Siegel, K., & Schrimshaw, E. W. (2000). Perceiving benefits in adversity: Stress-related growth in women living with HIV/AIDS. *Social Science & Medicine, 51,* 1543-1554.

Suls, J. (1982). Social support, interpersonal relations, and health: Benefits and liabilities. In G. Sanders & J. Suls (Eds.), *Social Psychology of Health and Illness* (pp. 255-277). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Sundin, E. C., & Horowitz, M. J. (2002). Impact of Event Scale: Psychometric properties. *British Journal of Psychiatry, 180,* 205-209.

Taylor, S. E. & Armor, D. A. (1996). Positive illusions and coping with adversity. *Journal of Personality, 64,* 873-899.

Taylor, S. E., Kemeny M. E., Reed G. M., (2000). Psychological resources, positive illusions, and health. *American Psychologist, 55,* 99-109.

Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering.* Thousand Oaks, CA: Sage.

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9,* 455-472.

Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry, 15,* 1-18.

Tennen, H., & Affleck, G. (1998). Personality and transformation in the face of adversity. *Posttraumatic growth: Positive change in the aftermath of crisis* (pp. 65-98). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Tennen, H., & Affleck, G. (2002). Benefit-finding and benefit reminding. In C. R. Snyder & S. J. Lopez (Eds.), *The handbook of positive psychology* (pp. 584-594). New York: Oxford University press.

Thoits, P. A. (1986). Social support as coping assistance. *Journal of Consulting and Clinical Psychology, 54,* 416-423.

Thornton, A. A., & Perez, M. A. (2006). Posttraumatic growth in prostate cancer survivors and their partners. *Psycho-Oncology, 15,* 285-296.

Tomich, P. L., & Helgeson, V. S. (2004). Is finding something good in the bad always good? Benefit finding among women with breast cancer. *Health Psychology, 23,* 16-23.

Tuck, I. , McCain, N.L., & Elswick, R.K. (2001). Spirituality and psychosocial factors in persons living with HIV. *Journal of Advanced Nursing, 33* , 776-783.

Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD checklist: Reliability, validity, and diagnostic utility.* Paper presented at the annual meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

Weiss, T. (2004). Correlates of posttraumatic growth in married breast cancer survivors. *Journal of Social and Clinical Psychology, 23,* 733-746.

Widows, M. R., Jacobsen, P. B., Booth-Jones, M., Fields, K. K. (2005). Predictors of posttraumatic growth following bone marrow transplantation for cancer. *Health Psychology, 24,* 266-273.

Wild, N. D., & Paivio, S. C. (2003). Psychological adjustment, coping, and emotion regulation as predictors of posttraumatic growth. *Journal of Aggression, 8,* 97-122.

Appendix A

Impact of Events

Please provide the following information about yourself:

1) Have you experienced a **major stressor (i.e., anything that has caused you significant distress)** in the past 12 months?

☐ Yes (if yes, proceed to question 2a)
☐ No (if no, proceed to question 3a)

2a) Approximately when did this event occur?

_____ _____ _____
Month Day Year

2b) Please describe the event:

_____

_____

2c) What about this stressor was the most difficult for you? (Skip Question 3, and proceed to next page)

_____

_____

3a) If you answered "no" to Question 1 on this page, please indicate what the **most stressful event** has been for you in the past 12 months.

_____

_____

3b) Approximately when did this event occur?

_____ _____ _____
Month Day Year

Below is a list of comments made by people after experiencing a stressful or traumatic life event. Think about the event you listed above. Please indicate how frequently these comments were true for you regarding this stressful event, DURING THE PAST SEVEN DAYS.

	0 **Not at all**	**1** **Rarely**	**2** **Sometimes**	**3** **Often**
I thought about it when I didn't mean to…..	0	1	2	3
I avoided letting myself get upset when I thought about it or was reminded of it…..	0	1	2	3
I tried to remove it from memory……	0	1	2	3
I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind……	0	1	2	3
I had waves of strong feelings about it……..	0	1	2	3
I had dreams about it……..	0	1	2	3
I stayed away from reminders of it……..	0	1	2	3
I felt as if it hadn't happened or it wasn't real……..……..	0	1	2	3

Below is a list of comments made by people after experiencing a stressful or traumatic life event. Think about the event you listed above. Please indicate how frequently these comments were true for you regarding this stressful event, DURING THE PAST SEVEN DAYS.

	0 **Not at all**	**1** **Rarely**	**2** **Sometimes**	**3** **Often**
I tried not to talk about it.....	0	1	2	3
Pictures about it popped into my mind.....	0	1	2	3
Other things kept making me think about it...	0	1	2	3
I was aware that I still had a lot of feelings about it, but I didn't deal with them.....	0	1	2	3
I tried not to think about it.....	0	1	2	3
Any reminder brought back feelings about it.	0	1	2	3
My feelings about it were kind of numb.....	0	1	2	3

Appendix B

Received Social Support

Please think about your main support person (the person you count on the most).

What is your main support person's relationship to you? (Check one only)

- ☐ My spouse/partner
- ☐ My son/daughter
- ☐ My brother/sister
- ☐ My father/mother
- ☐ Other family member
- ☐ Friend
- ☐ Other (please specify) _____

The purpose of this questionnaire is to find out how your main support person has responded in helping you deal with your stressful experience. Using the following scale, please rate your main support person's response by circling the appropriate number.

For each statement, please indicate: How often has your MAIN SUPPORT PERSON responded this way in helping you deal with your stressful or traumatic experience?

	0 **Never responds this way**	**1** **Rarely responds this way**	**2** **Sometimes responds this way**	**3** **Often responds this way**
Gave me some information on how to do something relating to my stressful event.....	0	1	2	3
Helped me understand why I didn't do something well.....	0	1	2	3
Suggested some action I should take.....	0	1	2	3
Gave me feedback on how I was doing without saying it was good or bad.....	0	1	2	3
Made it clear what was expected of me.....	0	1	2	3

For each statement, please indicate: How often has your <u>MAIN SUPPORT PERSON</u> responded this way in helping you deal with your stressful or traumatic experience?

	0 **Never responds this way**	**1** **Rarely responds this way**	**2** **Sometimes responds this way**	**3** **Often responds this way**
Checked back with me to see if I followed the advice I was given.....	0	1	2	3
Taught me how to do something.....	0	1	2	3
Told me who I should see for assistance about my stressful experience.....	0	1	2	3
Told me what to expect given my stressful situation.....	0	1	2	3
Said things that made my situation clearer and easier to understand.....	0	1	2	3
Assisted me in setting goals for myself...	0	1	2	3
Told me what he/she *did* in a situation that was similar to my own.....	0	1	2	3
Told me how he/she *felt* in a situation that was similar to my own.....	0	1	2	3
Told me that he/she felt very close to me.....	0	1	2	3
Let me know that he/she will always be around if I need help.....	0	1	2	3
Told me that I am OK just the way I am	0	1	2	3

For each statement, please indicate: How often has your <u>MAIN SUPPORT PERSON</u> responded this way in helping you deal with your stressful or traumatic experience?

	0 **Never responds this way**	**1** **Rarely responds this way**	**2** **Sometimes responds this way**	**3** **Often responds this way**
Comforted me about my stressful experience by showing me physical affection (i.e. hugging).....	0	1	2	3
Told me that he/she would keep the things we talked about private.....	0	1	2	3
Expressed esteem or respect for a competency or personal quality of mine regarding the stressful experience.....	0	1	2	3
Was right there with me during the stressful situation.....	0	1	2	3
Listened to me talk about my private feelings.....	0	1	2	3
Agreed that what I wanted to do was right.....	0	1	2	3
Let me know that I did something well.....	0	1	2	3
Did some activity with me to help get my mind off the stressful situation.....	0	1	2	3
Talked with me about my interests.....	0	1	2	3
Joked and kidded to try and cheer me up.....	0	1	2	3

For each statement, please indicate: How often has your <u>MAIN SUPPORT PERSON</u> responded this way in helping you deal with your stressful or traumatic experience?

	0 **Never responds this way**	**1** **Rarely responds this way**	**2** **Sometimes responds this way**	**3** **Often responds this way**
Gave me under $25.....	0	1	2	3
Loaned me over $25.....	0	1	2	3
Loaned me under $25.....	0	1	2	3
Provided me with a place to stay.....	0	1	2	3
Loaned me or gave me something (a physical object other than money) that I needed.....	0	1	2	3
Provided me with transportation.....	0	1	2	3
Pitched in to help me do something that needed to get done.....	0	1	2	3
Went with me to someone who could take action.....	0	1	2	3
Provided me with a place where I could get away for awhile.....	0	1	2	3
Looked after a family member while I was away.....	0	1	2	3
Watched after my possessions when I was away.....	0	1	2	3

Appendix C

Unsupportive Interactions Inventory

This questionnaire asks some additional questions about how your main support person has responded to you about your stressful life experience. Using the following scale, please rate how your main support person responded to you about the experience.

For each statement, please indicate: How often has your MAIN SUPPORT PERSON responded this way about your stressful or traumatic experience?

	0 **Never responds this way**	**1** **Rarely responds this way**	**2** **Sometimes responds this way**	**3** **Often responds this way**
Did not seem to want to hear about my stressful experience.....	0	1	2	3
Seemed to be telling me what he or she thought I wanted to hear.....	0	1	2	3
Said I should look on the bright side.....	0	1	2	3
Refused to provide the type of help or support I was looking for.....	0	1	2	3
Didn't seem to know what to say, or seemed afraid of saying/doing the "wrong" thing.....	0	1	2	3
Felt that I should stop worrying about my experience and just forget about it.....	0	1	2	3
Made "should/shouldn't have" comments about my stressful experience such as, "you should/shouldn't have _____.".....	0	1	2	3
Tried to cheer me up when I was not ready to cheer up.....	0	1	2	3

For each statement, please indicate: How often has your <u>MAIN SUPPORT PERSON</u> responded this way in helping you deal with your stressful or traumatic experience?

	0 **Never responds this way**	**1** **Rarely responds this way**	**2** **Sometimes responds this way**	**3** **Often responds this way**
Discouraged me from expressing feelings about my stressful experience, such as anger, fear, or sadness.....	0	1	2	3
Did somethings for me that I wanted to do and could have done myself.....	0	1	2	3
Told me to be strong, to keep my chin up, or that I shouldn't let it bother me.....	0	1	2	3
Made comments that blamed me or tried to make me feel responsible for my situation.....	0	1	2	3
Felt that it could have been worse, or that it was not as bad as I thought.....	0	1	2	3
When I was talking to this person about my experience, he/she did not give me enough time, or made me feel like I should hurry.....	0	1	2	3
In responding to me about my stressful situation, this person seemed disappointed in me	0	1	2	3
When I was talking to this person about my stressful experience, he or she changed the subject before I wanted to.....	0	1	2	3

For each statement, please indicate: How often has your <u>MAIN SUPPORT PERSON</u> responded this way in helping you deal with your stressful or traumatic experience?

	0 **Never responds this way**	**1** **Rarely responds this way**	**2** **Sometimes responds this way**	**3** **Often responds this way**
Made "I told you so," or similar comments about my stressful experience.....	0	1	2	3
Felt that I was overreacting.....	0	1	2	3
Asked "why" questions about the role I may have played in my stressful experience....	0	1	2	3
Told me that I had gotten myself into the situation in the first place, and that now I must deal with the consequence.....	0	1	2	3
Refused to take me seriously concerning my stressful situation.....	0	1	2	3
Responded to my experience with uninvited physical touching (e.g. hugging).....	0	1	2	3

Appendix D

Dealing with Illness Scale (Revised)

Listed below are items which represent ways that you might deal with stressful events or feelings which may be experienced along with a major stressor. We are interested in the degree to which you have used or are using each of these thoughts or behaviors.

For each statement, please circle the number that best describes how much or how frequently you have done what the item says, to deal with your stressful experience.

	1 I don't do this at all	2 I do this a little bit	3 I do this a medium amount	4 I do this a lot
Talked to someone to find out about the situation.	1	2	3	4
Concentrated on something good that could come out of the situation.	1	2	3	4
Talked to someone about how you were feeling.	1	2	3	4
Changed or grew as a person in a good way.	1	2	3	4
Just took things one step at a time.	1	2	3	4
Looked for the humor in things.	1	2	3	4
Wished you could change what happened.	1	2	3	4
Changed something about yourself so that you could deal with the situation better.	1	2	3	4
Kept your feelings to yourself.	1	2	3	4
Looked on the bright side of things.	1	2	3	4
Distracted yourself with other activities.	1	2	3	4
Focused on the good things in life.	1	2	3	4
Did things to help others.	1	2	3	4
Counted your blessings.	1	2	3	4
Took time for yourself.	1	2	3	4
Avoided stress as much as possible.	1	2	3	4
Changed your priorities.	1	2	3	4
Changed the way you lived in some way.	1	2	3	4

Listed below are items which represent ways that you might deal with stressful events or feelings which may be experienced along with a major stressor. We are interested in the degree to which you have used each of these thoughts or behaviors.

For each statement, please circle the number that best describes how much or how frequently you have done what the item says, to deal with your stressful experience.

	1 I don't do this at all	2 I do this a little bit	3 I do this a medium amount	4 I do this a lot
Looked to your family or friends for support.	1	2	3	4
Used positive thinking.	1	2	3	4
Felt depressed.	1	2	3	4
Tried to appreciate the good things in life.	1	2	3	4
Relied on your strong will and determination.	1	2	3	4
Felt angry.	1	2	3	4
Made different plans for the future.	1	2	3	4
Changed the way you felt about some things.	1	2	3	4
Felt like giving up.	1	2	3	4
Worked harder to achieve your goals.	1	2	3	4
Changed your priorities in life.	1	2	3	4
Fought back as best you could.	1	2	3	4
Did not let things get you down.	1	2	3	4
Lived for today.	1	2	3	4
Accepted the situation.	1	2	3	4
Tried to solve each problem as it came up.	1	2	3	4
Tried not to worry.	1	2	3	4
Tried to make the best of each day.	1	2	3	4
Kept others from knowing about your situation.	1	2	3	4

Appendix E

Center for Epidemiologic Studies Depression Scale

For each of the following statements, please circle the number that best describes how often you felt or behaved this way- DURING THE PAST WEEK

DURING THE PAST WEEK:	0 Rarely or None of the Time (Less than 1 Day)	1 Some or a Little of the Time (1-2 Days)	2 Occasionally or a Moderate Amount of Time (3-4 Days)	3 Most or All of the Time (5-7 Days)
I was bothered by things that usually don't bother me.....	0	1	2	3
I did not feel like eating; my appetite was poor.....	0	1	2	3
I felt that I could not shake off the blues even with help from my family or friends.....	0	1	2	3
I felt that I was just as good as other people...	0	1	2	3
I had trouble keeping my mind on what I was doing.....	0	1	2	3
I felt depressed.....	0	1	2	3
I felt that everything I did was an effort.....	0	1	2	3
I felt hopeful about the future.....	0	1	2	3
I thought my life had been a failure.....	0	1	2	3
I felt fearful.....	0	1	2	3
My sleep was restless.....	0	1	2	3
I was happy.....	0	1	2	3
I talked less than usual.....	0	1	2	3
I felt lonely.....	0	1	2	3
People were unfriendly.....	0	1	2	3
I enjoyed life.....	0	1	2	3
I had crying spells.....	0	1	2	3
I felt sad.....	0	1	2	3

For each of the following statements, please circle the number that best describes how often you felt or behaved this way- DURING THE PAST WEEK

DURING THE PAST WEEK:	0 Rarely or None of the Time (Less than 1 Day)	1 Some or a Little of the Time (1-2 Days)	2 Occasionally or a Moderate Amount of Time (3-4 Days)	3 Most or All of the Time (5-7 Days)
I felt that people disliked me.....	0	1	2	3
I could not get "going".....	0	1	2	3

Appendix F

Positive States of Mind Scale

This questionnaire is about the kinds of satisfying states of mind that you may have experienced **IN THE LAST 7 DAYS**. In the space to the left of each item please circle the number that coincides with the best description of your experience.

	0 Unable to have it	1 Trouble having it	2 Limited in having it	3 Have it well
Focused Attention: Feeling able to work on a task you want or need to do, without many distractions from within yourself.	0	1	2	3
Productivity: Feeling of flow and satisfaction without severe frustrations, perhaps while doing something new to solve problems or to express yourself creatively.	0	1	2	3
Responsible Caretaking: Feeling that you are doing what you should do to take care of yourself or someone else in a way that helps meet life's necessities.	0	1	2	3
Restful Repose: Feeling relaxed, without distractions or excessive tension, without difficulty in stopping it when you want to.	0	1	2	3
Sensuous Nonsexual Pleasure: Being able to enjoy bodily senses, enjoyable intellectual activity, doing things you ordinarily like, such as listening to music, enjoying the outdoors, lounging in a hot bath.	0	1	2	3
Sharing: Being able to commune with others in an empathic, close way, perhaps with a feeling of joint purposes or values.	0	1	2	3

Appendix G

Posttraumatic Growth Inventory

For each of the following statements, please indicate the <u>degree to which this change occurred in your life as a result of your stressful or traumatic experience.</u>

0 I did NOT experience this change as a result of my experience.	1 I experienced this change to a VERY SMALL degree as a result of my experience.	2 I experienced this change to a SMALL degree as a result of my experience.	3 I experienced this change to a MODERATE degree as a result of my experience.	4 I experienced this change to a GREAT degree as a result of my experience.	5 I experienced this change to a VERY GREAT degree as a result of my experience.

My priorities about what is important in life.	0	1	2	3	4	5
An appreciation for the value of my own life.	0	1	2	3	4	5
I developed new interests.	0	1	2	3	4	5
A feeling of self-reliance.	0	1	2	3	4	5
A better understanding of spiritual matters.	0	1	2	3	4	5
Knowing that I can count on people in times of trouble.	0	1	2	3	4	5
I established a new path for my life.	0	1	2	3	4	5
A sense of closeness with others.	0	1	2	3	4	5
A willingness to express my emotions.	0	1	2	3	4	5
Knowing I can handle difficulties.	0	1	2	3	4	5
I'm able to do better things with my life.	0	1	2	3	4	5
Being able to accept the way things work out.	0	1	2	3	4	5
Appreciating each day.	0	1	2	3	4	5
New opportunities are available which wouldn't have been otherwise.	0	1	2	3	4	5
Having compassion for others.	0	1	2	3	4	5
Putting effort into my relationships.	0	1	2	3	4	5

For each of the following statements, please indicate the <u>degree to which this change occurred in your life as a result of your stressful or traumatic experience.</u>

0 I did NOT experience this change as a result of my experience.	1 I experienced this change to a VERY SMALL degree as a result of my experience.	2 I experienced this change to a SMALL degree as a result of my experience.	3 I experienced this change to a MODERATE degree as a result of my experience.	4 I experienced this change to a GREAT degree as a result of my experience.	5 I experienced this change to a VERY GREAT degree as a result of my experience.

I have a stronger religious faith.	0	1	2	3	4	5
I discovered that I'm stronger than I thought I was.	0	1	2	3	4	5
I learned a great deal about how wonderful people are. . .	0	1	2	3	4	5
I accept needing others.	0	1	2	3	4	5
I'm more likely to try to change things which need changing.	0	1	2	3	4	5

Appendix H

Demographic Questionnaire

In this last section, please answer these questions about your background. All responses are confidential.

1. What is your gender?
   - ❑ Female
   - ❑ Male

2. When were you born?

   Month: _____ Year: _____

3. What is your racial/ethnic background? (Check all that apply)
   - ❑ African American (Black)
   - ❑ Caucasian (White)
   - ❑ Asian/Pacific Islander
   - ❑ Hispanic/Latino/Latina
   - ❑ American Indian
   - ❑ Other (specify) _____

4. What is your current year in school? (Check one only)
   - ❑ Freshman
   - ❑ Sophomore
   - ❑ Junior
   - ❑ Senior
   - ❑ Graduate student

5. What is your relationship status?
   - ❑ Married
   - ❑ Partnered or in a significant relationship
   - ❑ Separated
   - ❑ Divorced
   - ❑ Widowed
   - ❑ Single

6. What are your current living arrangements? (Check all that apply)
   - ❑ Live alone on campus
   - ❑ Live with roommate(s) on campus
   - ❑ Live alone off campus
   - ❑ Live with roommate(s) off campus
   - ❑ Live with my children
   - ❑ Live with other family members
   - ❑ Live with significant other

Appendix I

Informed Consent

RESEARCH SUBJECT INFORMATION AND CONSENT FORM

TITLE: Posttraumatic Growth Among College Students at a Large Urban University: The Role of Social Support and Unsupportive Social Interactions

VCU IRB NO.: HM10712

SPONSOR: Virginia Commonwealth University

Please ask the study staff to explain any words that you do not clearly understand. You may take home an unsigned copy of this consent form to think about or discuss with family or friends before making your decision.

Purpose of the Study:
The purpose of this research study is to learn about how people cope with a stressful or traumatic event in their life and understand factors that may be related to their quality of life.

Description of the Study and Your Involvement:
If you decide to be in this research study, you will be asked to sign this consent form after you have had all your questions answered and understand what you are being asked to do.

In this study you will be asked to complete a set of questionnaires. These questionnaires will ask about how you have been feeling, to describe a major life stressor, ways you have tried to deal with this event, and how people in your life have responded to you about this event. There also will be some questions about you in general (e.g., age, race, year in school, living situation, etc.).

These questionnaires will be given to you when you sign this form and you can choose to end participation at anytime without penalty. Approximately 140 students will participate in this study.

Risks and Discomforts:
Sometimes answering questions about these subjects causes people to become upset. Several questions will ask about things that may have been unpleasant. You do not have to answer any question you do not wish to respond to, and you may stop participating in the study at any point. If you become upset, the study staff will give you the names of counselors to contact so you can get help dealing with these issues.

Benefits:

Sometimes people feel good about participating in research studies where they can give information about important issues and experiences. As you fill out the questionnaires, you may learn something new or get a clearer perspective about your situation. You may not get any direct benefit from this study, but, the information we learn from people in this study may help us design programs to help support individuals and their loved ones who have endured stressful experiences.

Costs:
There are no costs for participating in this study other than the time you will spend filling out questionnaires.

Payment for Participation:
You may receive credit in your class for participating in this study based on prior agreement with your instructor.

Alternatives:
The only alternative is not to participate in the study.

Confidentiality:
We will not tell anyone the answers you give us. What we find from this study may be presented at meetings or published in papers, but your name will never be used in these presentations or papers.

We will not identify any answers you give us as coming from you. But, if you tell us that you might hurt yourself or someone else, the law says that we have to let people in authority know.

IF AN INJURY HAPPENS
Virginia Commonwealth University and the VCU Health System (also known as MCV Hospital) do not have a plan to give long-term care or money if you are injured because you are in the study.

If you are injured because of being in this study, tell the study staff right away. The study staff will arrange for short-term emergency care or referral if it is needed.

Bills for treatment may be sent to you or your insurance. Your insurance may or may not pay for taking care of injuries that happen because of being in this study.

Voluntary Participation and Withdrawal
You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study.

Questions
In the future, you may have questions about your participation in this study. If you have any questions, contact:

Kathleen M. Ingram, J.D., Ph.D.
Department of Psychology
Virginia Commonwealth University
P.O. Box 842018
808 W. Franklin Street
Richmond, VA 23284-2018
Telephone: (804) 828-6346

If you have any questions about your rights as a participant in this study, you may contact:

Office for Research Subjects Protection
Virginia Commonwealth University
800 East Leigh Street, Suite 111
P.O. Box 980568
Richmond, VA 23298
Telephone: (804) 828-0868

Consent:
I have been given the chance to read this consent form. I understand the information about this study. Questions I wanted to ask about the study have been answered. My signature says that I am willing to participate in this study.

Participant name printed Participant signature Date

Name of Person Conducting Informed Consent
Discussion / Witness
(Printed)

Signature of Person Conducting Informed Consent Date

Discussion / Witness

Investigator signature (if different from above) Date

Vita

Wendy E. Balliet was born on June 29, 1981 in Elmira, New York where she and her brother, Eric Balliet, were raised by their parents, Robert and Elizabeth Balliet. Wendy received her Bachelor of Arts in December, 2003 from Ithaca College where she majored in psychology.

Wendy moved to Richmond, Virginia in 2004 to begin her graduate education in the counseling psychology doctoral program at Virginia Commonwealth University. Her area of subspecialty is in health psychology. She will pursue research on adjustment to chronic illness for her doctoral dissertation and will be applying for pre-doctoral internship for 2009.